EDUCATIONAL REVIEW

MAY, 1896

The fifth annual meeting of the Harvard Teachers Association was held at the University on Saturday, March 7, 1896. The papers and discussions dealt with various phases of the subject named below. The first address was by President Eliot of Harvard University, who spoke as follows:

I

A WIDER RANGE OF ELECTIVES IN COLLEGE ADMISSION REQUIREMENTS

As usual, it is necessary to define the subject a little. "A wider range of electives in college admission requirements" —what field are we thinking of when we state this subject? If we mean the United States, the range of electives is already very large. Take, for example, the requirements for admission to the Leland Stanford University; twenty subjects are named of very different character and extent; and the candidate may present any ten out of the twenty. Botany counts just as much as Latin. There is a wide range of options at admission to the University of Michigan, with its numerous courses leading to numerous degrees; that is, there is a wide range of subjects permissible to a candidate who is thinking of presenting himself for some one of its many degrees. If we look nearer home, we find in such a conservative institution as Dartmouth College that there are three different degrees offered, with three different assortments of admission requirements and three different courses within the college. I noticed that at the last Commencement there were forty-one degrees of the old-fashioned sort and twenty-seven degrees of the newer sorts given by Dartmouth College. Here, in Harvard, we have had for many years a considerable

range of electives in the admission examination, particularly in what we call the advanced requirements. We, therefore, need to limit our subject a little, by saying that we are thinking of a wider range of admission electives in the Eastern and Middle State Colleges, the range of electives further West being already large in many cases.

Before 1870, in New England and the Middle States, one might say that the elements of Latin, Greek, and mathematics covered the entire range of admission subjects. To be sure, there was an additional subject called ancient history, but it held a very small place among the requirements for admission and in the school programmes, many excellent schools preparing their pupils to meet that requirement in five or six weeks, just before the examination for admission to college. English has now won a good place in school programmes and in college requirements for admission. What a marvel it is that it never had any place at all down to 1873, when it first appeared in the Harvard requirements! To-day, we recognize that French and German have acquired standing-room among admission requirements. At Harvard, modern languages are not admitted instead of ancient languages, but at such a conservative institution as Williams, and also at Tufts College, the modern languages may be substituted for Greek. Science has thus far obtained but a feeble hold. We think the requirements in science are more substantial at Harvard than anywhere else. We have been much encouraged by the rapid progress of the schools in meeting the Harvard requirements in physics; for already a large majority of candidates offer the experimental course in physics and not the book course. Still, when President Low was organizing six conferences on the requirements for admission to colleges in New England and the Middle States, he did not think it worth while to have a seventh conference on science; because the institutions within this territory give so little attention to science as a requirement for admission, and are so divided as to the nature of the requirement.

It seems as if the time had come when we should recognize

—if not among the prescribed subjects, at least among the electives open to candidates who present themselves for admission to college—history, science, and the modern languages, and should seek a definition of science as a requirement for admission. I regret very much that science was omitted from the recent conferences in New York, because it is one of the secondary school subjects that most need to be studied. A rational course in science—rational for the schools, because it affords a substantial training in observing, recording, and reasoning, and rational for the colleges, because it affords sound preparation for further study of science during the years of college life—is a great desideratum.

Let me say, in the first place, what I have often said before, that I, for one, have no interest whatever in new subjects for admission to college which are not just as substantial and difficult as the old ones. That a subject should be used as an elective in the admission examinations to colleges and universities because it is easier, seems to me to be wholly bad. That is my objection to many of the requirements for admission at the Western institutions. In the University of Michigan, for example, they use subjects as admission requirements which are treated in the schools in a manner distinctly inferior to the treatment of the old subjects, and they admit to college, on these comparatively new subjects, men and women who have had a training inferior to that which those who present the old subjects have received. That method, I am sure, has no interest for any of us. What we want are new optional subjects which are just as good for training and discipline as the old.

What prospect is there that we can get such new elective requirements for admission? It seems to me that the teaching of modern languages in many of the schools represented here has now reached such a stage that we may fairly say that a training in French, or German, or both, can be given which is just as substantial, strong, and useful a training as any other that is given in the same period. Can we say that of any other subject now proposed as an elective requirement? I am

afraid not. Yet there is good hope for history. Within a few months a great deal of progress has been made in bringing teachers of schools and college professors into harmony with regard to the claims and uses of that subject. Here, at Harvard, we have had a committee on requirements for admission at work all the year, which has paid special attention to history, and has agreed on a judicious school course in that subject; in the New York conference on history an agreement was reached without much difficulty in regard to a thorough four years' school course. I believe, therefore, that there is good hope that a substantial requirement in history can be agreed upon. In regard to science, the schools and colleges are farther from that result; but some progress of an instructive kind has been made. At Harvard, we feel that the true nature of a scientific requirement for admission has been already determined. It should include laboratory practice as well as lectures and recitations, and the original notebook of the candidate should be presented at the college or scientific school as evidence of the nature of the instruction which the candidate has received at school. We also think we have learned something useful with regard to the kind of evidence which may well come from the master of a school concerning his pupil's studies and attainments. We have found that the statements which we require from teachers as to the training of their pupils in physics have been a useful kind of evidence, and we are inclined to believe that evidence of the same sort might be advantageously used in other departments.

We have a good hope, then, that modern languages, history, and science may be added to the present requirements for admission at those institutions where but slight additions have thus far been made to the old requirements in Latin, Greek, and mathematics; and that these new subjects may be further extended and developed at institutions where some choice among equivalent subjects is already permitted.

Making this supposition, what is the first difficulty which presents itself with regard to the manner of using these new requirements? The first difficulty is to determine the proper

weight of each requirement, new or old—or in other words the coefficient of each requirement in all the various combinations into which it may enter. How shall we determine what weight shall be attributed to each subject in comparison with every other subject? In any broad elective system no individual can present all the subjects. He must present a part—say two-thirds or three-fifths—of the subjects. Each subject, therefore, should have a valuation, or coefficient, attached to it. How much shall each subject count in the total of an individual candidate? Our method of valuing admission subjects at Harvard is, I believe, as careful as any; but we do not pretend to have an accurate method of attributing a proper weight to each subject. We have two-hour subjects and one-hour subjects; that is, to some subjects we give twice as much time at the examination as to others, and twice as much weight in determining the question of admission or rejection. Even this rough valuation we might find it hard to justify. What should be the grounds of a just valuation of all the subjects that can be presented at admission examinations which include numerous options?

That question introduces us to a difficult inquiry. It is of course not an intelligent method to attribute a value to each subject in accordance with the time devoted to the examination in that subject. What clew have we toward a better mode of determining the value which ought to be attributed to each of these numerous electives, when the young men cannot present all the permitted subjects, and hardly three-fifths of them, indeed, if the range is adequately widened? I believe that the best criterion for determining the value of each subject is the time devoted to that subject in schools which have an intelligent programme of studies. The Committee of Ten examined the number of subjects used in about two hundred of the best secondary schools in this country, and the time-allotments for the several subjects. They found a great variety of practice as to both selection of subjects and time-allotments. You can hardly say that there is an accepted time-allotment

in these secondary schools for any subject—not even for the old traditional subjects. The time-allotments differ widely in different parts of the country, and even in different schools in the same part of the country. If, then, we are to determine by school time-allotments the valuations of the different subjects, prescribed and elective, which may enter into admission examinations, we must have some sort of standard programmes for secondary schools. At present I know no programmes which can answer that purpose except the provisional programmes of the Committee of Ten. They may fairly be said to be the best studied programmes now before the country, and to represent the largest amount of professional consent, simply because they are the result of the work, first of ninety school and college teachers divided into nine different conferences by subject, and secondly, of ten representative teachers combining and revising the work of the conferences with careful reference to the present condition of American schools. These programmes seem to me, therefore, to afford the most available means of determining the time-allotment for each subject. Since we really cannot study the use of a wider range of electives without examining this question of the value to be attributed to each elective, you will excuse me if I go into a little detail with regard to the time-allotment, and the consequent value to be attributed to each subject.

The selection of subjects made by the Committee of Ten is, I believe, fairly representative of good secondary schools in the United States. There are seventeen of these subjects. Now there is not as much difference in the time-allotment between these subjects as one who approached the subject without a pretty wide survey of the field would imagine. Latin has eighteen-eightieths of the time on these programmes. That is, a student who takes all the Latin he can take on that programme of the Committee of Ten which has the most Latin will devote to it eighteen-eightieths of the four years. Greek has a smaller amount of time; but if a student devotes to that subject all the time possible on the

classical programme of the Committee of Ten, including the remark in the note, he will give fourteen-eightieths of his four years to Greek. English has from eleven to seventeen-eightieths on the different programmes of the Committee of Ten. The largest amount of time devoted to it on any one programme is seventeen-eightieths, within one-eightieth of the time devoted to Latin. Algebra, geometry, and trigonometry have together fourteen-eightieths, which is the same proportion which Greek has. German and French have from eleven-eightieths to eighteen-eightieths each; that is, the allotment to French or German for a youth who takes all the French he can take, or all the German he can take, is just the same as that to Latin. History does not fare quite so well; but still history has from nine-eightieths to fourteen-eightieths, being about the allotment to Greek. Natural history subjects occur under the heads of physical geography, botany, zoölogy, and geology; but under the programmes of the Committee of Ten a pupil cannot take both botany and zoölogy, because these two subjects come at the same hours. An individual pupil can devote to this group only nine-eightieths of his time for four years, an allotment which matches the minimum in history. Lastly, for physics, chemistry, astronomy, and meteorology the total is the same as for history and for natural history, viz., nine-eightieths. That is the entire set of subjects. You see that the range of time-allotments is not so great as one would imagine from a cursory examination of the programmes. You may say that the time-allotments range from nine to eighteen-eightieths, it being understood that the natural-history subjects and the physical-science subjects are grouped. It is, therefore, not hopeless by any means to attempt to make a just valuation of each of these subjects and groups of subjects based upon time-allotment. The suggestion of some other possible basis for a proper valuation would be very useful; for a sound and uniform method of valuing the different subjects which can be presented at admission examinations will be of great importance, if the range of elective subjects is to be widened. It is absurd, I think, to give

the same weight to algebra, which has six-eightieths of the time of a pupil in four years, and to Latin, which has eighteen-eightieths of the same period of four years. Those two subjects should not count alike, or even in the ratio of one to two. Neither should botany with three-eightieths count like English with eighteen-eightieths of the pupil's time in four years. In widening the range of elective requirements for admission, we must avoid that sort of inaccuracy and injustice.

In general, with regard to the treatment of electives, in college or before college, this difficulty of determining relative values is a serious one, which has to be studied carefully, in order to preserve a just value and significance for the degree which is the common certificate at the close of individual courses, made up—we may say—of infinitely varied materials. In the more limited problem of dealing with electives at admission examinations the same difficulty will present itself, unless we have an intelligent mode of assigning a value to each subject.

I turn now to another serious difficulty which teachers know to exist in regard to new subjects at admission examinations, and indeed in regard to extensions of old subjects; I refer to the difficulty of securing uniform enforcement of the requirements which stand on paper. New subjects present more difficulties than old subjects in this respect, because in Latin, Greek, and elementary mathematics generations of teachers, both in school and in college, have been brought up to use the existing methods and materials—methods and materials which are better studied and defined than they are in the new subjects, and there is consequently a better common standard of work. A good deal has been done in New England during the last twenty years toward a uniform standard of enforcement of Latin and Greek requirements; but I think we shall all recognize the fact that to secure uniformity in the enforcement of new requirements will be more difficult than it has been in regard to the old. The isolated condition of colleges accounts in part for these difficulties. Twenty-five years ago the college faculties of New England were isolated to a most

extraordinary degree. They hardly had any opportunities of co-operative intercourse; and within each of those faculties there were men who had for years controlled the admission papers in their own subjects. An isolated faculty holding little communion with any other faculty or with secondary schools, and within the faculty a single man writing for years the papers for admission examinations in a given subject, and probably examining the answers, and that single man at Dartmouth holding a different view from the corresponding man at Yale or Harvard—from such conditions there could not but result a great difficulty for school-teachers with regard to the standard of enforcement. By co-operative effort through such organizations as the New England Association of Colleges and Preparatory Schools, and by conference methods, some of these difficulties have been removed; but we shall not get a satisfactory use of a wider range of electives in admission requirements, until this particular difficulty, which results from isolation and lack of co-operation among colleges, has been successfully dealt with. A year ago last November, I made to the Association of Colleges in New England the sugges tion that those colleges organize a board of examiners which should conduct all over the country admission examinations, the certified results of which should be good at all the New England colleges, and good anywhere else where the certificates of the board would be taken; and I detailed to the assembled representatives of the colleges the general method that could be followed. Several universities in this country have already acquired experience in conducting examinations at many points scattered over the United States; and they have proved that there is no mechanical difficulty at all in carrying out that method. There is enough experience now to demonstrate that examinations might be conducted at two or three hundred points in the United States by a common board of examiners, with the utmost ease, and on the whole a great saving of money to the candidates, even though a fee of five to ten dollars should be charged each candidate for the examination. I hardly think that the proposition was regarded

by the Association of Colleges as one to be seriously taken up. At any rate, it was not taken up. Two or three times lately I have made similar suggestions at teachers' meetings. I offered the same suggestion at the recent meeting of the Schoolmasters' Association of New York City and the vicinity; and President Low said at the meeting that his first impression of the plan was favorable, and that he should be glad to enter into a conference on the subject. That is an encouraging sign, because President Low is a man of large influence, and singularly fitted to promote co-operative enterprises. I think, therefore, that we may be approaching the adoption of some such method. It need not be a New England method. Any group of six to twelve colleges or universities in this country could organize the scheme for the whole country, the board appointing the writers of question-papers and the readers of answer-papers. The preparation of each question-paper would be committed to a group of men, not to one man, and this group would be taken from various institutions. The board would see to the mechanical preparation of the papers, and to all administrative details; and they would fix the places where the examinations should be held. If six universities united to do this, they would not use their own men only; they would select their examiners from a large variety of colleges and scientific schools. The results would be tabulated, so as to exhibit the record of every individual, just as the result of the numerous examinations conducted by Oxford and Cambridge at many centers in England are tabulated. The result for each individual could be used at any college in the country for what it was worth in its eyes. The scheme would not interfere in the least with the individuality of a school or college. The examinations would cover a larger range of studies than most schools could afford to supply, but any school could decide to what subjects it would devote itself, and any college or university could say what subjects it would absolutely require, and what range of electives should be permitted to its candidates for admission. It would of course be true in the future, as in the past, that the different

colleges and universities would make different demands. One college would demand more subjects than another; but subject by subject the requirements would be the same on paper, and they would be enforced by a common board. I speak of this matter now, because I feel sure that we cannot deal satisfactorily with a new set of requirements for admission, unless we imagine from the start that we are going to get a more uniform method of enforcement than has ever obtained in this country, even with regard to the old subjects. I think the teachers here present will see that this method would emancipate them from many annoyances, restrictions, and personal idiosyncracies which now seriously affect admission examinations.

These, then, are the three points that I wish to bring to your attention. First, that we may expect a large addition to the old-fashioned requirements for admission; next, that we need a mode of attaching to the new subjects, as to the old, a just valuation for admission purposes; and thirdly, that we shall need some method capable of securing tolerably uniform enforcement of the new and old requirements.

Let me add a few words with regard to the interests of the colleges and universities and of the country in this matter. We have seen of late years a large introduction of the elective system into secondary schools. Few teachers seem to appreciate the extent of this introduction. One reason for the common failure to appreciate this phenomenon is that the phrase "elective system" is not generally applied to secondary schools. Nevertheless, there actually exists in American secondary schools a very important amount of election of subjects, or groups of subjects. As a result of this election of subjects, or of groups of subjects, we find that young men and women are directed upon our colleges in different ways. That is, candidates for admission to colleges have really pursued different studies on different courses to a great degree while at school. The colleges have been trying to meet this condition of things by setting up different degrees to represent the next stage of education, ordinarily called the higher

education; and we have therefore witnessed in this country a multiplication of degrees, all of which represent college or scientific school education. Some universities use the four degrees called Bachelor of Arts, Bachelor of Science, Bachelor of Philosophy, and Bachelor of Letters. Many universities and colleges use two or three of these titles. In this process a grave evil has come into both schools and colleges, because the new courses in the secondary schools have generally been inferior to the old or classical course; and moreover, the new degrees in the colleges and universities generally represent an inferior attainment on the part of the pupils, either at school, or within the college or university itself, or sometimes in both places. It is a great object to put an end to these inferior courses, both in schools and in colleges. We want all the variety which is now permitted, but we want it to become a variety of equal things, and not a variety which includes some high subjects and many low ones, some subjects long and faithfully pursued and others pursued only for a short time and in a superficial way. The courses now inferior should be leveled up. The several degrees now in use ought to be made to indicate tolerably equal attainments, though various—a standard of education, training, and discipline approximately uniform, although the elements of the training or discipline have been different.

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Mr. John Tetlow, Principal of the Girls' High and Latin Schools, Boston, Mass., opened the discussion on Mr. Eliot's address, as follows:

Without committing myself to what President Eliot has said in all its details, I desire to say that I am in sympathy with his opinions, and that I shall endeavor to maintain the same general thesis; but I shall, of course, approach the subject from a somewhat different point of view.

One of the functions of a college is to strengthen secondary education. That proposition, I take it, needs no argument in

this presence. A college which has organized courses of study for the benefit not only of intending teachers included within its membership, but also of teachers in service in the community to which it geographically belongs; a college whose president has, from his entrance on official life, deemed it a part of his duty to co-operate with the teachers of secondary schools—such a college, I take it, is already committed to the proposition that I have announced. I have heard it asserted, both publicly and privately, by officers of this university that the teaching of the subject of geometry in secondary schools throughout the country has been materially modified by the character of the entrance examination to Harvard College. It is not necessary to admit that claim in all its fullness, but there is enough of truth in it to warrant me in referring to it in support of the proposition that I have announced—that one of the important functions of a college is the improvement, the strengthening, of secondary education. Accordingly, I shall assume the truth of that proposition in what I have to say.

When, therefore, a college proceeds to fix requirements for admission to its courses, it should not ignore the interests of secondary schools. On the contrary, it should be careful to guard and promote those interests. This country is not France, and we have not educationally any more than we have politically what Mr. Fiske would call a highly centralized despotism. We have a local option republic. There is no educational autocrat in this country who can take out his watch at a given moment and say that at this time, from the Atlantic to the Pacific, all the children are studying arithmetic in the grammar schools. We do not believe in that method of government, either civil or educational.

If such a subject as ballot reform or municipal government is under consideration, and improved methods have gained a foothold in one part of the country, we study the improved methods, and if we find them applicable to our own situation, we adopt them. That, too, is the method we take in education; and, if the American boy of sixteen does not know as

much as the French boy of sixteen, we are not disheartened. The advances that we make, we make voluntarily, because we are thoroughly satisfied that they rest on a solid foundation, and we go forward, not only with our minds convinced, but with our hearts happy; and we set as high a value on rational happiness as on intellectual knowledge in the formation of character.

When, then, the colleges are fixing their requirements for admission, what is the best way in which they can promote the interests of secondary education? I believe it is by accepting as a satisfactory preparation for collegiate work the attainment of a given stage of culture, the acquisition of a given amount of mental power through adequate training, rather than by demanding the possession of a prescribed amount of knowledge within a limited range of prescribed subjects.

Now, if these positions are sound, it seems to me that it follows that four years of effective training under a well-ordered course of study in a good secondary school ought to lead to college. That is only another way of saying that the so-called English high schools should be encouraged, through the requirements established for admission to college, to place themselves in closer relations than they have been able to do hitherto with the colleges. Some subjects included in the courses of study of these schools—for example, botany, zoölogy, drawing, general history—receive no recognition in the alternative requirements for admission to college. Other subjects, as chemistry and astronomy, receive only sporadic recognition. The result is that the fitting schools do not include these subjects in their courses of study, and that students who take them up in college show such a lamentable want of training in the right methods of pursuing them that these students have to be put by their professors on work appropriate to pupils of grammar-school age.

It is popularly said that the public English high school fits for life, while the classical preparatory school merely fits for college. Whatever may be said by way of breaking the force of this damaging antithesis, there is a truth in it; and the way

for college officers to meet it is by making the school that fits for life fit also for college.

I attended, a little more than a fortnight ago, a preliminary meeting of the committee on high schools of the city of Boston, called to consider the question of a possible modification of the high-school course of study so that every high school—not merely the Latin schools and the central English high school, but every high school within the limits of Boston—might fit pupils for college. I found myself in the strange position of inviting delay. I say that was a strange position for me to occupy. Some of you know that I have been clamoring, in season and out of season, for several years for a more effective recognition in the requirements for admission to college of the so-called English high schools. But I invited delay for two or three reasons. I knew, in the first place, that the general subject of a new scheme of requirements for admission to college was under consideration at Harvard. I knew, too, that this meeting of the Harvard Teachers' Association had been called for the express purpose of considering the subject of the desirability of increasing the number of elective subjects open to candidates for admission to college. I knew also that President Low, as President Eliot has said, had recently called six conferences with a view to the establishment of uniform requirements in as many leading admission subjects, and that there was a prospect of satisfactory conclusions on the part of those conferences in the near future. All these indications pointed to a probable modification of the present condition of things, and so I felt that precipitate action would be unfortunate; that such action might result in the adoption of changes in our present course of study which would have to be reconsidered later.

I suppose, in view of the subject that is under discussion here to-day, there must be representatives of the different departments of instruction of Harvard College present, and I should like to say one or two things to them especially.

I believe the subject of botany was at one time one of the elective subjects accepted for admission to Harvard College;

and that it was abandoned because those who offered it were found to be expert in determining the names of flowers by the aid of an analytical key, the leaves of which they could turn as they turned the leaves of a dictionary, rather than trained to a knowledge of the structure and growth of plants through the use of the microscope and the dissecting knife. But, if we can infer anything from the claim that has been made in behalf of the influence exerted by the Harvard College entrance examination in geometry on the instruction given in the secondary schools of the country, or from the results of the method of examination adopted in physics, it seems to me that we are at liberty to conclude that the failure in the case of botany is chargeable solely to the department of botany. It ought to be entirely practicable for the authorities of Harvard College to establish such means of testing fitness for collegiate work in botany, zoölogy, general history, and so forth, as shall effectively exclude those who have not had the right sort of training. Why isn't it a part of the business of the different faculties of the university to extend downward their powerful and beneficent influence into the secondary schools, and to bring about reform there in the teaching of other subjects than physics and geometry?

Those of us who are interested in establishing a closer relation between the English high schools and the colleges are looking forward with great interest to the outcome of the discussion now in progress as to the establishment of a new scheme of requirements for admission to Harvard College. We are hoping for two or three very desirable results. We are hoping that admission to college without Greek will hereafter not be more difficult than admission with Greek. We are hoping that we can bring the English high schools into line with the colleges without mutilating our courses of study. The way to do this is indicated in the question which we are discussing to-day This question, therefore, has more than an academic interest; it is a practical, a vital question. I believe that on the right solution of it depends the next step forward, not only in secondary, but in collegiate education.

II

THE MODERN LANGUAGES AS AN ALTERNATIVE IN COLLEGE ADMISSION REQUIREMENTS

Concerning the subject of freedom of choice in college entrance requirements, my frame of mind is that of a recent convert; and, like most men whose creed has just undergone a radical change, I am eager to influence in every possible way—even by relating my own experience—the belief of those who still cling to error. Several years ago, as some of you are aware, I was a member of the Harvard faculty. At that time you could scarcely have found a more ardent advocate of a rigid Greek and Latin test to be applied to all. Although my own work was in the department of modern languages, it seemed to me that a thorough training in the classics was the only satisfactory preparation for college study in any field. I thought, to be sure, that a fair knowledge of both French and German should be demanded also, so that the kindergarten branches of the college might be abolished; but I was entirely opposed to the substitution of the living for the ancient tongues.

When I look back upon my unregenerate state, and try to analyze the motives that then actuated me, I find that I was governed principally by two considerations. The first was a theoretical, impersonal one—a conviction that the proper function of a college is the higher development of a few choice minds that have all been subjected, for many years, to a particular kind of discipline, and, when weighed in one and the same balance, have not been found wanting. According to this view, all youths whose training has been different in amount or in kind should be excluded, as their presence may interfere with the rapid progress of the elect. The other con-

sideration, which, though never plainly formulated, was perhaps the weightier, must be called a selfish one: it was a feeling that the admission of students ought to be regulated in such a way as to reduce to a minimum the difficulty of subsequent instruction; when all the young men who come to us have studied exactly the same things, and have learned them well, we have a solid and even foundation on which to build; but if the antecedents of our pupils have been different, if their tastes, needs, and objects are varied, our task becomes complicated and fatiguing.

This latter argument needs only to be boldly faced and clearly expressed: its unworthiness then becomes immediately apparent; and I think the college men are few indeed who would consciously allow themselves to be moved by it. The first consideration, however—the belief that the college should be reserved for the chosen few—is in itself neither ignoble nor ridiculous, and merits serious discussion. You will note that the appropriateness of this argument depends upon the assumed superiority of the classical course to any other form of secondary training. For the present, let us admit this superiority; I shall return to that point later on.

Now, if my ideal of college work has changed, it is not because my former conception of it has become less attractive to me; the aspect of the things I see is not altered, but I see more things, now that I am obliged to labor in a broader field than the campus. I was once like the little peas in the pod, who said that all the world was green; green is still a beautiful color, but I have discovered that there are others. We are all of us—professors as well as the rest—first of all men and citizens, and neither our vision nor our usefulness should be restricted to the college limits. This association is composed of persons devoted to the cause of education: may we not, then, fitly ask ourselves what education is, why it is desirable, and whether we are really doing the most important things?

Education serves to increase the comfort of the people as a whole and the mental resources of the individual; but I think I am safe in stating that its prime object, in a democracy, is

the promotion of good citizenship. You will probably agree with me when I say that good citizenship needs promoting. Our century has ventured upon tremendous experiments in the line of government, and, however disappointing the consequences have been, we know that there is no such thing as going back. The century to come must grapple with the problem of training the masses to use the supreme authority that has prematurely come into their possession. And this is the mission of education. "But," I should have exclaimed in my pea-pod days, "this is a task for the public schools, not for the colleges!" It is a task for all. The schools have been trying for many years to inculcate the necessary lessons—and with what result? Evidently their unaided efforts are not sufficient; a larger share of the work must be done by the colleges.

There are two ways in which the colleges can make their influence felt—indirectly, by helping the schools, and directly, by widening the scope of their own activity. Were I addressing a different audience, I might find it necessary to defend the proposition that the spread of college ideals and college modes of thought are beneficial to a democracy; before a Harvard association, I think I need no arguments to sustain the statement that these are the very things our country most wants. The more our future voters and political leaders are subjected to the kind of discipline that our universities provide, the higher will be the grade of competence among electors and elected. It so happens, moreover, that the very measures best calculated immediately to extend the college influence in the commonwealth are the ones most likely to prove beneficial to the schools. Hence we are not obliged to treat separately the direct and the indirect methods of communication with the public, but may consider them together; and when all has been said, it may appear also that the university, in generously adapting itself to the urgent needs of popular education, will be pursuing the best course for its own welfare.

Hitherto, most of our great colleges and universities have

been soaring, balloon-like, far above the activities and interests of the dwellers on earth; unheeded by the people, and heedless (save in a speculative way) of the life below them, they have formed little worlds apart. To enter into one of these communities, a child must be devoted, almost from the cradle, to the pursuit of an arduous course of study, which, to the average parent, appears to serve no other purpose than that of "fitting for college." Once graduated, the young man associates with others of his kind, and is but little inclined to take an active part in public affairs.

At present, great efforts are being made to remedy the evil; and in this reform, it seems to me, we can all take some share. What we need in all our States is a continuous course, extending from the kindergarten to the graduate department, or university proper, and the professional school. This programme need not and should not be the same everywhere: provision should be made for all sorts of local and individual differences. The important thing is that there shall be no break, no convenient place to leave off, no difficult transition, no point at which the scholar who wishes to proceed further must turn about and start afresh from the spot he reached years before.

When we have such a course as this, every child will feel that if he can give to education the necessary time and labor, the highest instruction may be his; the college will be regarded no longer as the idling-ground of the privileged few, but as the natural sequel to earnest and well-directed effort in the lower grades. Then, I am sure, we shall see a great and ever-growing body of students coming from the laboring classes; and colleges, brought into natural connection with other popular institutions, will play a more and more important part in our national life. What an incentive to intelligent industry in every department of education! And what a gain to the cause of enlightened citizenship and good government! At the prospect of such advantages as these, should not every specialist be willing to disregard ancient prejudice and personal preference concerning the "best" course of preparatory study, and join with the representatives of all other

branches in opening as many and as broad avenues as can be made from the secondary school to the university? The work needs the co-operation of all; and those who refuse to do their part must expect to meet the charge of hostility or indifference to progress.

I would not be understood as advocating any lowering of college standards. The entrance requirements of our highest institutions of learning do not seem to me excessive in point of quantity. The demand is for an adaptation of the quality of the conditions to the necessities of modern life, and for a determined effort, on the part of the schools, to meet them. On the one hand, the college requirements should offer such a variety of combinations that every graduate of a good high school should find one that suited his case; and, on the other, the high schools must so raise their standard and enrich their curriculum as to leave no gap between themselves and the college.

The special needs of various parts of the country are obviously very different: in some regions nearly the whole scheme of public instruction is still to be created; in others the chief need is a more careful valuation of the several studies pursued; in others yet the principal want is adjustment, the fitting of one grade to another. This latter state of affairs is the one that we still find in New England. Here we have good schools and good colleges; but these two kinds of institutions have grown up independently, there is even now no proper relation between them, and hence no continuity in our educational system. Adjustment is what we need—a closer connection between admission requirements and the courses of study that most of our schoolboys and schoolgirls pursue.

Here we are at once confronted with the oft-debated question whether French and German shall be accepted as a substitute for Latin and Greek. Viewed from the standpoint which I have taken, this problem admits of but one solution. The classics never have been and never will be regarded by the people at large as a profitable field of labor for children not destined to be scholars; it is a field to be cultivated by those

few whose tastes and occupations will permit them to reap a harvest. As long as education was confined to certain favored classes of society, it was proper enough that the ancient languages should form a necessary and important part of it; but if we really are to try to bring representatives of all ranks into our colleges, we must begin by recognizing a variety of needs and preferences. The fact that Greek has been a joy to me should not debar my differently-minded brother from the benefits of a higher education.

Few men, I think, value more than I do the influence, on certain students, of a profound and sympathetic study of the classics; and no one, I am sure, would see with greater regret a marked decline in the work of that department. Although I have, for years, made no practical use of Greek, and am now unable to read the easiest Greek prose without a dictionary, I do not regret one hour of the time I spent upon that language. Why? Simply because my inclinations, duties, and surroundings, in my early years, made it possible for me to go beyond the memorizing of grammatical forms and catch some glimpses of the artistic spirit that pervades Hellenic literature.

The conservative advocates of a Greek requirement are apt to confound an experience of this kind with the ordinary performance of the schoolboy. Even among the few children who are now prepared for college, and are compelled to pass examinations in the classics, how many ever do anything more than the preliminary drudgery? To the average student—even under our present conditions—Greek and Latin mean nothing but the uninteresting tasks of committing to memory endless rules and inflections, and of turning into bad English a few texts, most of which have no striking literary merit. The only value of such work as this lies in a sort of mental discipline that can be gained fully as well through more attractive and more useful studies. In the time thus unprofitably spent a pupil could have acquired the ability to read French or German with ease, some practical familiarity with the language, some insight into European thought and customs, and, best of all, some appreciation of the masterpieces

that abound in modern letters. The frank recognition of the comparative values of these acquisitions will go a long way toward establishing normal relations between our secondary and our higher institutions.

Let us consider, for instance, the case of Harvard College and the Boston public schools. The Harvard entrance conditions include Latin and either Greek or, as a substitute, a mathematical course so difficult as to suggest that it was intended to be prohibitory. In Boston we have two Latin schools, whose special business it is to fit boys and girls for college. These schools are not properly connected with the rest of our educational system. To enter one of them and take the full curriculum, a pupil, unless he is willing to go to college at an advanced age, must either be taught privately or leave the grammar school long before the completion of the course; hence they are filled, in the main, by children destined, from their birth, for a university career. We have also a school of mechanic arts, which serves as an intermediary between the grammar school and the Institute of Technology. But the mass of boys and girls that pursue their studies above the grammar grade is absorbed by our eight English high schools. These provide a three and (for those who desire it) a four years' curriculum. Scholars who faithfully complete this longer course are, in my opinion, just as mature and just as well equipped for college work as the Latin school graduates; but the subjects they have studied are not the ones that Harvard demands.

Now, most of these children come from ignorant families, and hardly begin, before they have reached the last or next-to-last year of school, to realize the value of a higher education. At this time, a thirst for knowledge is aroused in many—in very many—of these minds; in nearly all cases, however, it is too late. We are not justified in saying that there are opportunities enough for such boys and girls. With nearly all of them a straw is sufficient to turn the scale; their parents are generally indifferent to their plans; and if the children cannot hope to be admitted, on an equal footing with

other students, to the institution that they regard as the best, they have not the strength to make the necessary struggle. A few, by mastering the theoretically impossible mathematical requirement, or by studying the classics with private tutors, find their way, with the waste of at least a year's time, to Harvard; a few others drift into technical schools or into minor colleges, where the entrance requirements are either more liberal or less severe; but most of them sacrifice to the Greek idol their newly awakened hopes and ambitions.

What is to be done? Our English high-school course cannot be turned into a mainly classical curriculum; such a change would not only be contrary to the interests of the vast majority of our scholars, but would doubtless result in reducing by a third or a half the number of children who go beyond the grammar grade. No, it is for the college to take the first step; let it demand a high degree of excellence in each subject, but let it offer, in the choice of subjects, all reasonable liberty. The duty of the schools will then be to bring all their work up to the university standard.

Such an arrangement as this would mean, for the college, rapid and healthy development and increasing influence on American thought and life; to the schools it would be of advantage in four ways. In the first place, the possibility (however remote) of a university course before each pupil would be a priceless incentive to intelligent application. Secondly, the existence of a standard fixed by a competent authority from without would tend toward the substitution of a spirit of industry and accuracy for the laziness, indifference, and general mental slovenliness that necessarily prevail among children whose pace is set by an easy-going local school board elected by indulgent parents. In the third place, the fact that all topics were "college studies" would certainly call for better instruction in the branches that are now regarded as of minor importance. Latin and Greek have hitherto been conspicuously successful as instruments of intellectual discipline simply because, forming the all-important element in a preparatory course, they have been vastly better taught than other things.

If all studies led to college, we might expect, before long, to find the same (or even a higher) grade of excellence in the teaching of French and German. Lastly, the higher degree of proficiency required in certain topics would necessitate the introduction of these studies at an earlier and more fitting stage of the child's career.

Experience has convinced me that, of all the years from five to forty, the time now generally chosen for taking up French and German—namely, the period between the ages of fifteen and twenty—is the very worst. We may learn a language either by intuitive comprehension and unconscious copying or by painstaking observation and discriminating imitation. Pupils at the stage just mentioned are too old for the first process and too young for the second; they are, moreover, tormented by a peculiar bashfulness that almost incapacitates them for oral exercise in a strange tongue. Children between eight and twelve, on the other hand, have not begun to be self-conscious, and are fresh enough to be fascinated by the novelty of a foreign language; their minds are alert, their habits of pronunciation have not become inflexible, and they take naturally to the observation of details. Young men and women, too, who have reached the age of twenty, are free from the morbid shyness of the intermediate years; and although their habits of speech are more fixed than those of the child, and their unconscious observation of small things is less keen, they have the advantage of mature intelligence, varied experience, and long training.

In Boston we have already tried, in several grammar schools, the experiment of teaching French to very young children, and the results have been so encouraging that I hope other schools will soon fall into line. If we can have a regular course of three or four years in this grade, well planned and well directed, our pupils, by the time they reach the age of fourteen, will have mastered the worst difficulties of pronunciation, and will have become so accustomed to hear their own voices uttering foreign sounds that, when the bashful season comes, a French word will have lost for them its special terrors.

Moreover, the application of some of the most important principles of grammar will have become, with these children, a matter of habit; and easy French texts can be read by them without unpleasant effort. I shall dwell here neither upon the great improvement that such a course as this would inevitably produce in the pupils' pronunciation of English, their understanding of English sentence-structure, and their power of oral and written expression in their native idiom, nor upon the immense advantage that would result from it for those who mean to study a second foreign tongue, whether this language be modern or ancient.

When we are able to count upon such a foundation as I have just described, we can devote the four years of secondary work to higher discipline of three kinds: to the study of literature, as a means of awakening new interests, broadening the pupil's horizon, and educating his æsthetic sense; to translation, as a means of developing mental alertness and training the child in the correct and ready use of his mother tongue; to grammar and composition, as a means of exercising and strengthening his reason. I hope you have noticed that I am not afraid to speak the word *grammar*. Of late years this noble science has been in sad disrepute; and now that men are feeling the need of it again, they hesitate to call it by name. I am glad, therefore, of an opportunity to say not only that I regard a thorough grammatical training as an essential feature of any successful language teaching, but that I consider grammar, in itself, as the most valuable instrument we possess for the development of reasoning power; and it seems to me clear that the abolishment of so-called "technical" grammar work in our lower grades is responsible, in some measure, for the generally flabby mental condition of our present high-school pupils and college students.

I need go no further into details. The mere outline of an imaginary seven or eight years' course of study suffices to show that the subject of modern languages contains possibilities great and varied enough to give it a place in the front rank of admission requirements. Begin French and German in the

grammar school, make the final standard high enough, and the result will be a many-sided proficiency, a cultivation of speech, mind, and taste, that the most fanatical conservative cannot fail to recognize as at least equal in value to the traditional smattering of ancient tongues. Then, perhaps, we shall be spared the incongruous spectacle of a great college providing no elementary instruction in Greek (a subject that can very profitably be studied at a somewhat mature age), and devoting a large part of its energy, time, and money to the drilling of reluctant young men in the A, B, C of German and French.

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Mr. Morris H. Morgan, Assistant Professor of Greek and Latin in Harvard University, opened the discussion on Mr. Grandgent's address, as follows:

I suppose that I have been asked to open the discussion on this paper because I am a classical man, and because it is expected that I shall attack Mr. Grandgent's position from the classical point of view. It seems to me that it would be easy to defend the classics and even to claim for them pre-eminence over every modern tongue; and hence to urge that they should be studied in the schools on the ground of this pre-eminence. This line of argument has been often taken. I do not think that the pre-eminence of the classics has ever been more ably supported than in this very room, about six years ago, by the late James Russell Lowell in an address delivered before the Modern Language Association of America. I suppose that there was expected from him a glorification of the modern languages at the expense of the classics, but I think that anybody who will read over that address, and read between its lines, will conclude that a good many members of that Association, as they went home, might have said to themselves with Balak: "I called thee hither to curse mine enemies, and behold, thou hast blessed them altogether."

I have been much interested in Mr. Grandgent's remarks about his change of heart. His experience, if he will forgive

me for saying so, seems to my mind to amount to this: When he knew Greek—he says that he doesn't know it now, but this, I hope, is only his fun—when he knew it, he believed in it; now that he doesn't, he doesn't want anybody else to know it. This reminds me very much of a beautiful little animal fable which I suppose is to be found in French and German as well as in Greek and Latin. I suppose that you all know the fable that I mean: of the fox that had lost his tail. But there is really nothing at all in the argument that Greek is a useless study because one forgets it in a few years. Of course one forgets it if one does not keep it up, but the same is true of French and German and of every other college study. Who is there here who could pass a decent examination in a single college study which he has not kept up since his graduation?

But we are not here each to glorify his own subject. We are here in the cause of education. If, therefore, I were to defend the requirement of Greek as a normal study in our schools, it would not be upon the ground of the pre-eminence of Greek. I should rather show that it was a natural part—whether a possible part or not, at least a *natural* part—of every well-considered system of education for boys. I do not think that it would be a difficult thing to show, and I flatter myself that I could demonstrate it to the satisfaction of almost everybody here. But the effort would be a waste of time. And why? Because there is at this moment a substitute for Greek in our scheme of admission examinations, and there always will be. It is futile to dispute upon this question, and I do not conceive that anything is to be gained for the cause of education by argument on such a point.

The only question is, then, what should the substitute be? Mr. Grandgent has uttered again the often-repeated cry that the Harvard substitute for Greek is "practically prohibitory, and so difficult as to indicate that it is intended to be prohibitory." Now, what are the facts here? Preparation for the elementary requirement in Greek takes two years. The present substitute for Greek is not wholly mathematical. For

instance, one-half of the substitute may be chemistry. Now everybody who has had anything to do with preparing boys for this requirement knows that it is a simple one, and that it can be easily got up in the time which would be devoted to a year of Greek. In fact, it is so easy that a letter has recently been received here from an eminent teacher in this vicinity, who holds that it is unfair to allow chemistry to count for two hours while elementary physics counts for only one. The other half of the substitute for Greek may be a combination of solid geometry with logarithms and trigonometry. Does anybody fancy that this means more than the other year's work in Greek? If anybody does, he must answer two questions. First, why does the mathematical conference of the Committee of Ten recommend that solid geometry be no longer a subject taken at admission examinations by itself as advanced work, but that it should be combined with plane geometry as an *elementary* subject? Second, who can call logarithms a study too difficult for boys when, fifteen years ago, it was actually required of all boys as one of the subjects of admission? The truth is that the combination of logarithms and trigonometry with solid geometry is taught in the college in a single course that lasts but one year. The fact, then, seems to be that the substitute is in itself no more difficult than the Greek requirement, and that it should take no more time. It would appear, then, that something is wanted in the place of Greek which shall be *easier* than Greek. For the average parent cannot possibly claim that the subjects in the substitute stand further away from the life of the average citizen than Greek does. And it cannot be said, by one who supports an advanced study of the modern languages in schools, that our present substitute for Greek is such that hardly any teacher knows enough to teach it. For the answer is easy: Hardly any teacher knows enough to teach modern languages on the high plane which Mr. Grandgent desires. And if you reply: Ah, but such teachers will be forthcoming if this new substitute is allowed, the rejoinder is—Why have they not been forthcoming to teach the present substitute?

I would not, however, be misunderstood. I am not defending the present substitute as the only possible one. Very far from it. I had no hand in its adoption, and am far from thinking that this mathematical training, or mathematical combined with scientific, is the only proper equivalent for the training which comes from a study of Greek. I am ready to accept any substitute in any subject which can be shown to be as good for any boy as I conceive Greek to be. This is not saying, however, that I personally should *advise* a boy to give up the study of Greek for anything else.

Mr. Grandgent, however, has suggested a long and deep study of the modern languages in the place of Greek—yes, even in the place of both Greek and Latin. But he seems to forget that there are two objections against such a course. The first one of these two objections is that it involves a chronological absurdity, and the second is that it is open to the charge of deceiving your best pupils. The chronological absurdity is that you propose to carry pupils for a considerable distance into the study of two modern languages without giving them any idea of the ancient languages which provided the modern languages with their vocabularies and with their literary forms. The deception is that you lead your best pupils to believe that a man can be a real scholar in modern languages without knowing anything of the ancient ones. This fallacy has been recognized lately by the division of modern languages in this university, which in future will require every candidate for honors in these languages to have an ordinary knowledge of Latin and at least an elementary knowledge of Greek. For my own part, instead of this very advanced study of the modern languages in our schools as a substitute for Greek, I should prefer to accept a substitute made up of a more moderate amount of modern languages in combination with one of the sciences or with mathematics.

On the subject of the object of education itself, Mr. Grandgent holds high views. He holds that its prime object is to promote good citizenship and that the masses must be trained to use the supreme authority which has prematurely come

into their possssion. I will not say that it is actually his view that this end can be sooner attained by teaching in schools advanced French and German rather than advanced Latin and Greek. This question of teaching citizenship in the schools and to the masses admits of long argument; for it is not a new question, being as old as Plato and Socrates, who interested themselves much in the question whether virtue, and especially political virtue, could, after all, be taught to the young.

Mr. Grandgent, when he was in the "pea-pod state," believed that a college was a place for the higher development of a few choice spirits. He forgets that we now have a Graduate School for these. Nobody, perhaps, holds any such views of Harvard College now. I have not heard them expressed here for a long time. We are talking to-day about the requirements for admission to college. Let me suggest a different definition of a college. A college is perhaps a place in which a young man, having come thither with a proper general educational foundation, may pursue one of two courses: either a general course of liberal education; or, having come with that same broad foundation, may pursue the special course of study to which his taste may lead him. For myself, I believe that the latter is the better course, because it gives more power; and, after all, power is the end of education.

The discussion of Mr. Grandgent's address was continued by Dr. Julius Sachs of New York, as follows:

I find myself in substantially the same attitude on the subject of the modern languages as an alternative requirement that Mr. Grandgent represents: I believe in it, provided a high degree of efficiency is demanded. Wherever German and French in the secondary-school course have been made supplementary to a thorough preparation in one or both of the classic languages, it has been done in response to the very proper demand that every person who pretends to culture shall be reasonably familiar with the three tongues in which the most vigorous modern thought on literary and scientific

subjects is embodied. It is quite a different thing to make one or both of these languages (German and French) an *alternative* for the study of the classics. We must devise the means to make them educationally as valuable as our classical training has hitherto been. Within the circle of college-bred men no one surely will deny that classical training has been valuable in the past, and with the improved methods that recent years have developed, it is still our most potent educational factor; no other educational agent, thus far available, secures so definite an insight into language-structure, promotes so rapidly an ever-growing power in the choice of vocabulary, and stimulates so directly an appreciation for various models of good literary form. Here, then, are several aims which good modern-language teaching must strive for. Clearly defined grammatical study is above all indispensable; from the nature of the two modern tongues there is little cause to fear that the study of their grammars may become the burden to the youthful mind that Latin and Greek grammar once were. The example of the newer school grammars for Latin and Greek may well be followed in the creation of suitable modern-language grammars. Notwithstanding the great wealth of forms in Latin and Greek, the most recent grammars, following the example set by German scholars, endeavor to teach in compact form the essentials, and relegate the minutiæ and the unusual forms to the fuller works that are appropriate for detailed linguistic study. Many of the authors of our French and German grammars seem to me to lack that sense of proportion which accentuates what is vital and passes that lightly by which is occasional. In view of the comparative simplicity of the French and German grammars, the grammatical discipline should be enforced with the greatest energy, not merely as a discipline *per se*, but as the sole basis for the practical handling of the foreign tongue. It is to the laxity in the demand for grammatical accuracy that I am inclined to ascribe the haphazard character of much of the modern-language work in our schools. The acquisition of an extensive vocabulary is so obviously desirable that *this* need has been most

generally met by German and French teachers; it is apt to be closely allied to the choice of reading material for the secondary student. I know that in your university the recommendation of a sharply defined course of reading is objected to in the classical, as well as in the modern-language courses; but it seems to me that the latitude you advocate is not as advisable in the modern-language direction as in the classics. In Latin you demand the ability to read *easy* Latin prose; it is possible to enumerate on the fingers of one hand the standard authors from whose writings the selected passages will be drawn; in like manner your poetical selections are limited to the works of two or three authors, and your candidates have in consequence been familiarized in their school course with the writings of these standard authors; they have been trained on models of generally recognized excellence. How does the case stand with French and German? I can conceive of a faithful teacher who, with the latitude extended to him, has read a series of selections, each one good in its way, and yet in no sense representative of the best thought that is so abundant in these two tongues. The area of selection has widened a hundred-fold, and one may dip into the literatures at many points without securing the object for which these studies are carried on. And a definite object, I take it, is to be subserved by these studies; not the chance familiarity with any phase of foreign life; *that* is not a genuine educational feature. Unless we are ready to abandon completely the *kind* of educated man that emanated from the classical training, we ought to insist that in part, at least, such works shall be used as suggest the best that the world's literature has produced. However one may rail at the study of the classic tongues, surely no one will gainsay the charm that is inherent in the classic *spirit* as it expresses itself in the writings of the great modern poets. Several of them are *themselves* the aptest illustrations of the kind of influence that our modern-language work should insist on; without being themselves classical scholars, they are saturated with the spirit and dignity of the classic world. It should be insisted that, as a part of their

training, our students shall enter upon this legacy at as early a day as possible. Let the ephemeral production of the modern novelist bring them into touch with the language of the day and the social atmosphere it represents, but do not fail to require some study of permanently valuable literature. The well-known objection that a specified list of such standard works enslaves and narrows the teacher can be easily obviated. Let the requirement read: a play of Lessing, Schiller, Goethe respectively, and in like manner of Corneille, Racine, Molière, and the range of choice is not unduly narrowed. I myself declare for the freedom that is thus offered, rather than for the license of unlimited selection in which the best may be ignored. And it is all-important that a considerable portion of the reading undertaken in secondary work consist of selections from works that are classics in their respective tongues. With the selections in vogue in many of our schools, it seems to me as if we wished to convey to the youthful mind the impression that one must penetrate to the sanctuary of the classicists in German and French through the highway of the commonplace. It is an observation that others have surely made, even as I have made it, that pupils cannot await the time until they are permitted to read *Maria Stuart*, *Wilhelm Tell*, *The Maid of Orleans*. Youth—at any rate, high-minded youth—manifests in the period of secondary-school life a susceptibility for idealism in literature which is truly refreshing amid the perversion of all former canons of literary criticism which confront *us* of mature age. It is a fatal error to postpone acquaintance with these masterpieces to the college period. They help to develop good taste; let them be introduced as early as possible in the formative period.

There is but one other point to which I wish briefly to refer; it is the question of the time that is to be devoted to this alternative, if it is to be a substitute for the classics. As I firmly believe that we are in little danger of pitching our requirement too high, the suggestion of Mr. Grandgent that three or four years in the grammar school and four years in the high school be divided up between the study of the two

languages meets with my cordial approval. We shall of course be met at once by the well-known cry: "That is clearly impossible, with the demands that other subjects make on our time—mathematics, history, English, science." But, gentlemen, it must be made possible, if there is to be any real progress in secondary education. We must rid ourselves of the trammels of the twenty hours per week fetish; it is an easy computation, of course, to prove that within that limit it is not feasible. But the twenty hours per week must be exceeded; our young people are not working too hard; their intellectual efforts do not overtax them; it is the dissipation of energies in other directions, in social distractions, for example, that wears on their systems.

Little wonder that President Eliot finds French, German, and English boys far more advanced at seventeen than our boys are; these foreign boys are not what we popularly call "grinds," by any means; they enjoy rational and moderate amusements among each other, but parents and pupils accept as their ultimate guide in regulating the daily life of the young people the advice of wise and well-meaning masters, whose entire life is dedicated to this work. It is no small issue this; we must gradually revolutionize the utterly false position of parents toward the school question, and in emphasizing the sore points of our present system, we cannot be too insistent. It would be unfair to omit mention of the fact that an increase in the hours of school work ought not to mean an increase of recitations, conned at home without the co-operation of the teacher. Our teachers would under such a change of system be *compelled* to be true guides to their charges, not mere inquisitors to detect deficiencies in preparation. I think we are approaching that condition steadily, and I ardently hope that the advanced instruction in French and German will profit by it.

III

BOTANY AS AN ALTERNATIVE IN COLLEGE ADMISSION REQUIREMENTS

It is not easy to urge the claims of any new study to a place among the subjects required or allowed in college entrance examinations without first saying a few words with regard to the general reasons for adding anything to the present long list of requirements. If, as is quite commonly believed, the student who is able to do successful work in one department can do good work in any other, there would seem to be little reason for offering much option among the subjects in which he is to prepare himself for college. If he has spent his time in the fitting school in the careful study of three or four substantial subjects and can pass a rigorous examination on these, he may be regarded as successfully fitted for the work of the college. I wish, however, to protest emphatically against this obnoxious fallacy, and to state at the outset that it is to many teachers a matter of daily observation that the capacity of the student varies through a wide range in the power to grasp and assimilate diverse kinds of knowledge. The instructor who has had much experience in any kind of biological work in the secondary school, if the teaching is done on the departmental plan, can hardly have failed to notice that the standing which he assigns to individual pupils will, in a not inconsiderable number of cases, vary most widely from that which the mathematics teacher, for example, will give to the same pupil. It is a rather common assumption with the teacher of the mathematical subjects that the reason why any given boy or girl is not as successful in his department as in some others lies simply in the fact that such a pupil is unwilling to put a fair proportionate amount of study on the often somewhat distasteful work of mathematics. I do not believe that careful

examination will warrant any such view of the matter. Most of us are perhaps familiar with some such cases as that of a boy whose experience I call to mind as a marked instance of the kind of misfit which the preparatory course often proves to be. This boy for two successive years, at least, tried to master the first year's Greek in a preparatory school. Hard study availed him nothing, and he was at length obliged to abandon the attempt to qualify himself for the college entrance examinations. Entering college as a special student, he quickly became notable for his attainments in all the biological subjects that he could elect. The dunce of the preparatory school had become a leader; his collections and preparations were displayed as models, and his knowledge was deferred to on all hands. With his altered position there came to the young man a natural access of confidence. His work, which had been a dreary nightmare, became a pleasure and an inspiration. To the professor who discovered the student's hitherto unsuspected powers there came the rare gratification, which has perhaps been given to some of us, of finding a career for a boy before whom there seemed to lie no intellectual future. From the biological work of the college to the study of medicine was the natural step which this student next took, and at one of the foremost medical schools in the country he so far distinguished himself that he was given a position of trust in the institution, while still an undergraduate student. After his graduation from the medical school he advanced quickly into the successful practice of his profession.

In order to test the validity of the assumption that the pupil who does well in one subject may be expected to do well in most or all others, I have looked through the records of the last two years (1893–94 and 1894–95) for the entering class in the Boston English High School. To make a complete analysis of the data would have required much more time than I was able to devote to the inquiry. For the present purpose it seemed enough to compare the record of final examinations in the only biological subject studied (botany) with that in the

mathematics subject (algebra). The whole number of pupils examined in the entering class, during the two school years, was 526. Those students were selected from the list whose percentage in algebra was below the pass mark (50 per cent.) and whose percentage in botany was above the mark. There were 83 pupils whose record showed this contrast, or nearly 16 per cent. of the entire number. This is not a larger proportion than one might expect to find. But it seems a noteworthy fact that the average mark in botany for the 83 pupils is 64 per cent., while their algebra mark is only 31 per cent., less than half as good. In a considerable number of cases, of course, the disparity is much greater. There were two cases with 50 per cent. in botany and zero in algebra, one of 60 and zero and one of 80 and zero. In some at least, of these cases, the boys were of more than average general intelligence. They were promising candidates for college education or for that of a technical school, and yet they had gained just nothing at all in their first year's work at mathematics of a somewhat generalized character. It may be said that the comparison between algebra and botany is hardly a fair one, inasmuch as the latter is a more attractive subject than the former. On the other hand, as things are at present arranged, algebra—as the student well knows—leads straight to the college or the technical school, while botany leads nowhere beyond the high school.

A set of cases parallel to those found in the English High School could readily be made out in regard to the many boys who annually leave one of the largest preparatory schools in New England at the beginning of the first full year's work in Greek. Naturally most of the boys who drop out at this time are either dull or idle, but there are notable exceptions. It is a suggestive fact that out of the average entering classes of about 150 in that school, all of whom are admitted upon their distinctly pledging themselves to take a college course or its equivalent, only 50 have ordinarily been graduated, or sent directly to a college or some other institution of learning. Doubtless this means, among other things, that the parents

have often miscalculated the powers of their children, or that the latter are frequently in haste to go into business of some kind and so become self-supporting. But after making allowance for all such cases there is still a considerable number of pupils who leave the school not because they cannot or will not do good intellectual work, but because the kind which is offered them is distasteful. It would be interesting to make a careful examination of the relative standing, in all subjects, of the pupils in a large school where most of the studies of secondary schools have been well taught for a good many years—all about equally well, and all by the most rational methods. Unfortunately, I do not know where to look for such a school.

If one is unwilling to admit that evidence of the kind just cited, from the successes and failures of pupils of secondary schools, proves anything more than that such students are often unwilling to learn what they are required to master, he can at any rate hardly refuse to admit the testimony of men of genius to their own inability to acquire what every undergraduate is supposed to know. Faraday will hardly be accused of having been deterred by idleness or general inactivity of mind from having gained the mathematical knowledge which he needed to forward his researches. Darwin was not shut out from the ready use of modern languages by anything less formidable than an extreme inaptitude for mastering these well-nigh indispensable means of communication with his fellow-investigators. Conclusions in regard to the working of ordinary minds may safely be drawn from the study of exceptionally powerful and highly specialized ones, if we remember that in viewing these we are looking at a greatly enlarged sketch, with the lights and shadows exaggerated.

Keeping this precaution in mind, run over the long list of men who distinguished themselves in certain lines of thought, while they showed themselves to be incapable of even ordinary attainments in other directions. Does not the result of any such examination lead one at least to the conclusion that, for multitudes of the men who have most largely aided the

world's progress, courses of study, in or below the college, could hardly have been made elastic enough? Believing this to be the case, and agreeing with the often expressed opinion of the first speaker of to-day, that most studies, pursued in the right spirit and by right methods, may be made to yield great disciplinary results, I cannot regard it as other than wholly inexcusable to restrict the candidate for college to any list of subjects which may exclude the very things—the only things—in which he is qualified to excel. If it be argued that considerations of expense or of convenience make it necessary considerably to restrict the number of subjects in which the pupil in the ordinary secondary school may be fitted for college, it may certainly be said that, in all cases where it is possible to carry out a more ideal scheme of preparation, it is an offense against the first principles of pedagogy to neglect to do this to the fullest extent.

If it be granted that there are minds which can do more work and better work in the biological field than in any other, it remains simply to show that preparation in this department can be made efficient; that examinations can be so shaped as to discover how satisfactorily the work has been done; and that the power for work of the student who has been prepared in such subjects will be adequate to the demands of a college curriculum.

In the first place, then, as regards the possibility of doing satisfactory biology teaching in the secondary schools. It is safe to assert that but very few secondary schools are at present so equipped, or can be so equipped, as to do even reasonably good work; that is, to the extent of acquiring knowledge at first hand, in the domain of anatomy and physiology, human and comparative. The equipment that would be required is too expensive. The constant dissection, and occasionally vivisection, are so repugnant to the average pupil and still more perhaps to the average parent; the necessity for special laboratory rooms and appliances is so great, that it seems hopeless to expect in any short time really good teaching on this side of the biological field. There are few points

on which competent teachers are so wholly agreed as upon the extremely unsatisfactory nature of physiology teaching in the secondary schools and the lower grades. It seems necessary to retain the subject in school courses because of the immense practical importance of a moderate knowledge of hygiene, and because this knowledge is so much more easily grasped, and so much more interesting, if it is not taught in a purely empirical way. But all that can be done in the way of demonstrations with the skeleton and the manikin; all the home-study by the pupil of his own bones, joints, and muscles, his own respiration and circulation; all the experimental discussion by the teacher of the nature of digestive processes, the aeration and deoxidation of the blood, and kindred topics—all these still leave physiology in great part a book-subject.

Zoölogy offers a far more promising field for school-work. I was greatly interested, years ago, in trying to teach Morse's admirable *First book in zoölogy* in high-school classes. Very lately, conversations with instructors in the zoölogical department of Harvard university have convinced me of the feasibility of a somewhat extended course in the elements of zoölogy, beginning in or below the grammar schools. But the same difficulties which stand in the way of satisfactory work in human physiology are encountered (though in a much slighter degree) in the prosecution of zoölogical studies in primary and secondary schools.

With botany, it seems to me, the case is different. Less illustrative material is required, and it is of a less expensive kind. Teachers are already better prepared to do the work that is demanded, and this study can be pursued in a fairly effective way, even if the laboratory work of the class must unfortunately be confined to the limits of the schoolroom and the home. Such teaching, of excellent quality, is already to be seen in a good many of the larger high schools of the country, but it is so far from general that the audience will perhaps pardon an attempt to show in some detail how the work can be shaped so as to secure satisfactory results, even under somewhat adverse conditions. Let it be understood at

the outset that the botany teaching contemplated has little to do with the time-honored plan of examining in a cursory way the organs of a few common plants, then becoming acquainted with some typical flower clusters, studying the floral organs, acquiring a rudimentary knowledge of the principles of botanical classification, and then putting the most thorough work of the term, or year, into the analysis or determination of the largest possible number of flowering plants. This kind of study has often succeeded in arousing a love of flowers, but very little scientific importance can be attached to ordinary classwork conducted on this plan. I am convinced, as the result of some twenty years' experience in botany teaching in secondary schools, that the thing to be sought is to interest the pupil in the plant as a living being, pushing its way amidst fierce competition in a more or less hostile environment. He must be made to acquire a fair knowledge not merely of the gross anatomy but of the histology of the plant; following it up at once with such vegetable physiology as is within his comprehension. He must be made to think of the plant as seeking its food, building up its tissues, reproducing itself and securing the maintenance of the species by a series of wonderfully interesting adaptations which he is, as far as possible, to recognize and trace out for himself. He must learn to regard unicellular organisms like the Protococcus and yeast as being no less truly plants than the lily, the oak, or the elm. The microscope is to be brought into constant requisition, so that it will not be necessary to take statements about the minute structure of vegetable tissues at second hand. Simple chemical tests are to be freely applied to detect such almost omnipresent substances as starch, sugar, and proteid materials. Their distribution in the various parts of the vegetable organism, and the reasons for it, should be fully discussed. The phenomena of osmose, of root pressure, of transference of water throughout the plant, and the transportation of tissue-forming material from portion to portion of the plant must be carefully examined. The movements of the plant, whether for the purpose of securing

the most desirable illumination, for climbing, or for the capture of insects are to be watched and recorded, and the whole subject of the adaptation of flowers to secure transportation of pollen by insects, by the wind, and by other agencies is to be investigated at first hand. The various contrivances by which seeds and fruits secure transportation are to be studied in the seeds and fruits themselves, so that the importance of an adequate dispersal of seeds may be fully recognized. Finally, systematic botany is to be studied by actual comparison of a wide series of types.

The botanical laboratory is coming to be a recognized part of the high-school building, but it will be several years before such a room will be as generally provided as chemical and physical laboratories now are. In the mean time some of us have managed to do a good deal of experimental work on the desks of the pupils and the teacher, and to have another important portion of the work done by the children at home. Given a few compound microscopes and a generous supply of materials for window-gardening, together with necessary apparatus borrowed from the departments of chemistry and physics, and it is an easy matter to carry through enough observations to rest the beginner's knowledge of botany on a sound inductive basis. Very large amounts of illustrative material may be secured all the year round from the druggist, the grocer, the provision-dealer, and the lumber-dealer. It is unnecessary to lay down a more complete syllabus of the work to be done; but if it is understood that the pupils who are able to do so are to be encouraged to do constant reading in the works of such authors as Darwin, Lubbock, Kerner, and others who have treated in an accurate and yet intelligible way the relations of plants to their environment, it goes without saying that the pupil will not only have learned to observe and to reflect, but will also have acquired a considerable knowledge of the use of books of a somewhat advanced character for the purpose of reference.

The apprehension that the study of botany or zoölogy could not be carried far enough, or occupy sufficient time in the secondary school, to take the place of such a subject as an

ancient or even a modern language, no doubt is partly responsible for the exclusion of biological subjects from the admission requirements of some colleges. There need, however, be no fear on this score. One of the most admirable of recent laboratory manuals for botanical study in the high school would require (so I am assured by an expert) not less than three school years for its completion. And in this book many of the most interesting and workable topics are dismissed with a bare mention.

It would not be difficult to shape the college entrance examination in botany on the same general lines that have resulted so successfully in the Harvard physics examination. Let the candidate be required to present a suitably prepared and certified notebook, to pass a laboratory examination on the morphology and the gross and microscopical structure of a designated number of plants and their tissues, and to pass a written examination on such portions of his subject as could best be treated in that way. It would, no doubt, be two or three years before anything approaching an ideal scheme of examinations could be worked out, but the subject presents no difficulties greater than would occur in any of the physical sciences. It is refreshing to think of the stimulus to the work in botany in secondary schools that would follow any general adoption by the colleges of such an examination as is here outlined. Never again would the omniscient chairman of a village school committee warn the botany teacher, as the speaker was once solemnly warned, that the *study of plants* had occupied too much of the time of his class, and that the committee wished it to be understood that memorizing the text-book must constitute the main portion of the work in that subject (as in all others).

It may be worth while here briefly to discuss the exact nature of the training which the pupil may derive from the study of botany carried along the lines which have just been so hastily sketched.

It is well known that even elementary botanical work of the slightest character does a good deal toward training the power

of observing. Botanical study in which the histology of some of the principal tissues is taken up does far more. If the first drawings from the microscope are afterward compared with *camera lucida* drawings or with photo-micrographs, and the pupil is sent back to the instrument again and again until he grasps and reproduces all the most important characteristics of the structure at which he is looking, he will have learned, as never before, what it means to see things accurately. I have in mind an instance in which every pupil in a division of some thirty-five members went twice to the microscope, before a single one out of the whole division was able to make out the shape of the markings on grains of potato-starch; most of the class merely failed to see any markings at all! But when at length someone did discern what the markings were like and sketched them on the blackboard, the rest of the division were disgusted with themselves for not having made out the structure at once.

Some skill in the processes of inductive reasoning is another most valuable result of the careful study of elementary botany by the laboratory method. The experimenter is, for example, led to investigate for himself the influence of temperature, light, air, and moisture on the germinating seed. Each condition is studied separately, and finally the pupil is able, by synthesizing his observations, to state the optimum conditions for the germination of the particular seed which he is investigating. Again he makes water-cultures of germinating plantlets, sprung from some seed with thick cotyledons such as the pea. Part of the plants are left in their natural condition, others have had the cotyledons removed, and the value of the stored nourishment in the seed is made perfectly evident by the extremely unequal growth of the plants. In another instance the plumules are removed from sprouting seeds, and the pupil is given a chance to infer the importance of this bud by noting with what difficulty the plant at length manages to supply its place. The function of the cutinized or corky epidermis is learned from a comparative experiment in which a pared and an unpared potato are placed in a hot, dry

atmosphere, and the very unequal losses of evaporated water are determined by successive weighings. These are but a few instances of the kind of experimental problems which the competent teacher can supply in large numbers for class use.

Other studies which do not so readily admit of experimental treatment may be not less fruitful in their effectiveness for training the logical faculties. Given a general statement of the need for cross-fertilization in many flowers and a few hints as to the means by which pollen-carrying is accomplished, and it is easy to find work to occupy a class for weeks in tracing the means by which designated flowers secure cross-fertilization. A series of problems of increasing difficulty may easily be arranged, beginning with such flowers as those of the buttercup and the flax, and ending with those of labiates, composites, and orchids. Another most important set of studies is in connection with weeds and their phenomenal success in the struggle for existence. One such weed as the dandelion or the sorrel may easily furnish a class with a week's work in ferreting out the causes of its tenacious hold upon fields and gardens.

I am well aware that a most plausible objection is often urged against the introduction of subjects such as the biological ones into college admission requirements. It is argued that elementary teaching in this department is far inferior to that in the classics and mathematics, and that it may even unfit the student for serious biological work after he enters college. Doubtless much of this suspicion of secondary-school biology is well grounded. But imagine the conditions reversed. Suppose that nearly all colleges for the next twenty years refused to accept Greek, Latin, or mathematics as subjects for their entrance examinations, but laid the main stress on English, the biological sciences, and the physical sciences. Does anyone doubt what class of subjects would be best taught in our fitting schools at the end of the period mentioned? The law of supply and demand is no less operative in the educational than in the business world. And how many colleges would be willing to put themselves on record as

advocates of an unlimited perpetuation of the existing school and college curriculum simply because it is, irrespective of whether it ought to be? The reformation that has come over physics-teaching in the best high schools and academies within little more than a decade ought to have impressed the most conservative educator with the fact that, to use the words of a late eminent American, "Some things can be done as well as others." Nor is biology-teaching below the college everywhere as bad as college professors think it. It occurred to me, about a year and a half ago, to conduct a brief inquiry into the views and wishes of botany teachers in secondary schools all over the country, and into the mode in which the work in this department is carried on. Unless I am greatly mistaken, in at least ten of the schools which were heard from the course would compare most favorably, as regards amount, educational value, and fitness to prepare the pupil for more advanced botanical study and research, with the elementary course in botany in Harvard College.

Distrust of educational theorizing, unless supported on a broad foundation of observed facts, is the common state of mind of most experienced teachers. We would all be glad to know by actual trial just how far the elements of biological knowledge, gained as far as possible by original observation in the grammar school and the high school, would go toward equipping the college freshman for the rapid and effective prosecution of further work in zoölogy or botany. We have thus far had little opportunity to judge by experience of the value of this preparatory work in the subjects mentioned. Is there any reason, however, to doubt that such preparation, judiciously managed, would help as much toward further acquisition as the ability to use equations helps in mathematics far beyond the range of elementary algebra, or practice in the use of a dictionary aids the college student in linguistic work? I for my part am quite at a loss to understand the half-contemptuous, half-resentful spirit which not a few college professors of botany or zoölogy show when it is suggested that boys and girls of twelve to eighteen years are capable of learn-

ing to see objects through the microscope and to reason about the things seen. Is not this attitude of mind an obsolescent relic of the days when all biological work below the college (and a good deal of that within its hallowed precincts) was of about the same educational value with the traditional use of the globes, as taught in English schools for girls? But a more robust style of instruction is now rapidly coming in, administered by high-school teachers who are nearly always college graduates. Many of them, too, are unwearied students at some one of the summer schools of biology or of the winter laboratory classes for teachers, now becoming more common.

Unless the psychology of the secondary-school pupil, when he attacks the natural-history sciences, suffers a notable change from its condition at other times, there is no assignable reason why he may not be as happily, as rationally, and as thoroughly fitted for college along biological lines in part as on any other plan.

J. Y. Bergen

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Mr. C. B. Davenport, Instructor in Zoölogy in Harvard University, opened the discussion of Mr. Bergen's address, as follows:

I wish to say a few words on the use of zoölogy and botany for admission examinations to Harvard College, from the standpoint of the college and of the examiner.

The chief advantage to be derived from the study of zoölogy and botany seems to me to be twofold. In the first place, it gives the student an interest in nature, which is of very great importance on account of its moral effect upon the student. It gives the student something to think about, something which is always present when there are no other objects to occupy his attention. The interest in nature can best be stimulated by out-of-door work. Such work, therefore, ought to be carried on, it seems to me, in the high schools, or perhaps better, in the elementary schools. The other advantage to be derived from biological study is the particular sort of

training which comes best from biological work, together with the special knowledge which is derived from the study of animals and plants.

I want to speak now especially of this second advantage of biological study and particularly to lay stress upon the proper sort of work, so far as I see it, which the high school should undertake in these subjects in order to prepare students for college examinations. In the first place, that work should be very largely laboratory work. I think that is admitted now on all hands. It is only a few years ago that zoölogy and botany were taught almost entirely by text-books, but the laboratory has now replaced the text-books. The work does not necessarily have to be microscopic in character, although it would be of great advantage to have it so in part. It is very desirable, of course, that the student should have notebooks, in which are recorded the observations made in the laboratory.

The laboratory work may be largely of an experimental nature. This, I think, has been shown to us by the text-book of Mr. Bergen. Through his efforts, we see that experimental work can be introduced into the laboratory work. This experimental work he has shown to be very readily performed in the case of plants. The experiments which can be performed are largely those on growth and on the modifications of growth. In the same way experimental work can be performed upon animals, and experimental work of a nature which involves no cruelty to the animals, and therefore cannot be objectionable to anyone. Plants exhibit pre-eminently the processes of growth and reproduction, and experiments on these functions can therefore be performed best on plants. Animals exhibit locomotion and response to stimulus, and therefore experiments on such functions can be very well performed on animals, and they involve no pain. Experiments upon locomotion can be made in this fashion. It is well known that certain organisms, as for instance, the common slugs, move almost always with reference to certain external agents, as gravity and strong light; they move in straight lines vertically either from or toward the light. They have also

a tendency to move toward or from various chemical re-agents, and toward or away from moisture. The phenomena of response to stimulus in locomotion are shown also by many other animals, as earthworms and such vertebrates as fish. Many of these experiments on animals can be carried on in winter time, since the animals can be obtained then. I want to lay stress on the fact that experimental work can be carried on in connection with laboratory work, not only in plants but also in animals, and that experimental work should form an important part of laboratory work.

Let me say one word about the correlation of work in zoölogy and botany. The Committee of Ten suggest in their report that high schools shall teach one or the other of these two subjects. As a matter of fact, in many of the high schools, particularly throughout the West, the two subjects are taught together in the same year, not necessarily side by side, but one half of the year devoted to animals and the other to plants. That method is coming into use more and more, I think; it is the method which was recommended many years ago by Huxley and was carried out in his text-book. It is the method which forms the basis of many text-books in laboratory work in biology. It seems to me to have an advantage in this, that so far as their activities go, animals and plants exhibit similar phenomena, and they have a fundamentally similar structure. The two groups of organisms should therefore, when practicable, be studied together, and the three periods a week for one year, proposed by the Committee of Ten, might be devoted, one-half to zoölogy and one-half to botany; or perhaps, it may seem advisable to have two half-years for zoölogy and two half-years for botany. I speak of this because I think it is important, since the method of teaching them together is so much used in the West. In the high schools of Chicago instruction in zoölogy and botany is under the direction of a single man, Mr. Boyer, and that method is adopted uniformly in all the high schools of that city and many of the surrounding cities.

Concerning the character of the examinations, it seems to

me that the examination in physics sets the standard for this. The examination should cover the laboratory work and also the talks which ought to be given in connection with the laboratory work. The examination upon the laboratory work may be twofold; first, an inspection of the student's notebook to be handed in properly certified to by the teacher—not too much stress to be laid upon the notebook; and also, if possible, an examination at the university itself under the eyes of the university officers, in order to see that the student thoroughly understands the subject. A few questions on or the description of an object given to a student will enable the instructor to find out much more about the pupil's training than the inspection of the notebook. There should also be an examination on the student's knowledge of the principles of zoölogy. A college admission requirement of that sort is not a new thing. It exists to-day in the case of the University of Chicago. It may be interesting to read those admission requirements:

> The candidate is advised to include work upon both plants and animals.
>
> The candidate will be required: (*a*) To submit to the Examiner a notebook consisting of drawings and descriptions of the animals and plants he has studied. It is recommended that studies of at least fifteen principal forms be undertaken, that these studies be so far as possible such as do not demand the use of a compound microscope, and that attention be given chiefly to those organisms that can be procured and studied in the living condition; (*b*) To demonstrate, in the college laboratory, under the supervision of college officers, that he possesses some power to observe accurately and intelligently. More stress will be laid upon correct observations and the careful recording of those observations than upon technical terms, and the candidate is cautioned against employing terms which he does not understand; (*c*) To answer in writing a few general questions about familiar animals and plants, such as the perch, crayfish, grasshopper, fern, trillium, pine tree, etc. The candidates in 1896 will be expected to have some first-hand knowledge of the habits of the earthworm.

This involves observation upon living animals which can be easily kept in the classroom. I notice that this requirement has been slightly altered for the future, in that requirement *b* has been omitted. It may be that it has been found an impracticable requirement to administer.

IV

COLLEGE ADMISSION REQUIREMENTS

The two following papers contain the substance of the remarks of the speakers at the annual dinner of the Association.

In the preface to his second volume on the French Revolution Taine tells us that almost all his contemporaries were imbued with political principles, while he had none, and that he undertook his book in order to seek for them. "Up to the present time," he says, "I have found only one, so simple that it appears childish and I hardly dare to announce it. It consists entirely in the statement that a human society, and especially a modern society, is a vast and complicated thing." It is with a similar feeling that a layman approaches the great problem of education.

After Latin ceased to be the living basis of all collegiate scholarship its interest for instructors began to wane, and the teaching of Latin in the schools lost its real vitality. The mere mechanical discipline in grammar assumed an undue preponderance, and few American boys acquired sufficient familiarity with the ancient languages to read Greek and Latin literature for pleasure. Of late years there has been a great improvement in this respect, but it is impossible for Greek, Latin, and mathematics to regain their old position as the sole foundation of college education. I do not mean that the classics will ever cease to be an important means—perhaps the most important means—of intellectual training, or that they will ever cease to be a prerequisite for literary scholarship, but merely that they can no longer be treated as the only gateway to education. Other subjects have forced themselves into prominence; elbowed their way, as it were, to the front. French and German, for example, are essential to-day for the higher study of many branches of knowledge. Moreover, the interest of mankind has turned in a striking manner to

the study of nature, a feeling that is shown in poetry, in art, and above all in science. This tendency has become so strong that it cannot be neglected either in schools or colleges, and must be taken into account in every well-considered scheme of education.

The recognition of many new branches of knowledge as factors in a liberal culture has raised difficulties that were not felt before. It has made the question of the relative educational values of different subjects a matter of prime importance. This problem is one about which an authoritative opinion can only be formed by persons directly connected with education, but a layman is struck by the absence of agreement among teachers, except perhaps so far as the elementary schools are concerned. Each instructor appears to place a peculiarly high value on his own subject; and indeed, to paraphrase the language of the Constitution of Massachusetts, there is a prevalent theory that all subjects are born free and equal and possessed of certain inalienable rights, among which may be reckoned that of being on the list of requirements for admission to college.

Even after the problem of values in secondary schools has been solved, the question of admission to college is not settled, for, while it is important to increase the avenues to the higher education, it does not follow that every course of study leading to a diploma in high schools ought to be accepted for entrance to college. It is by no means clear that the most complete curriculum for a boy whose schooling is to end at seventeen or eighteen is necessarily the best foundation for university life. A bush whose maximum height is five feet spreads out early, while a tree that is destined to be fifty feet tall is but a slender shoot when five feet high, and although its branches ultimately cover more ground than those of the bush, they expand much later. The same thing may perhaps be true to some extent of the human mind also. This I know is dangerous ground for a layman to tread, but there are one or two matters in connection with it in which even a layman may venture to express an opinion.

Something was said this morning about the need of extend-

ing the field of the entrance examinations in order that the college might be relieved from doing kindergarten work. With that statement I cannot agree, for it seems to me that the elementary courses are among the most valuable the college offers. A college doubtless fulfills its highest duty in training great scholars, who, by devoting their whole lives to the search for truth in some special line, extend the limits of human knowledge, and add new fields to the intellectual heritage of man. But the college must also provide a liberal education for the vastly more numerous class of men whose time will be chiefly occupied with industrial pursuits or the practice of a profession. Now, a liberal education at the present day may be said to consist in obtaining a sufficiently thorough knowledge of one or more subjects to avoid the danger of superficiality, and as broad an acquaintance with all others as it is possible to acquire. Of course the ordinary college graduate cannot be expected to possess much detailed information about all branches of knowledge, nor is it desirable that he should do so; but he can and ought to be familiar with the general tone of thought of men of letters, art, and science, of philosophers and historians. This, by giving him a wider range of vision, will help him in after life to form sounder opinions, and it will enable him to pick up and assimilate a great deal of information he would not otherwise retain. I am not suggesting that such a diversity of studies ought to be compulsory. I assert merely that the college ought to provide the opportunity for pursuing them. But if elementary teaching were to be completely transferred from the college to the preparatory schools, no one could pursue any study that he did not offer at his entrance examination. His election would be made for life at the time of admission, and his range of thought would of necessity be limited. The only escape from such a condition is for the university to teach elementary courses. Not elementary in the sense of courses fit for boys of twelve, but courses adapted for young men whose minds are otherwise well trained; so that a student who does not propose to pursue a subject exhaustively can learn the fundamental principles on

which it is based. Everyone accustomed to teaching must be aware that a person who is well grounded in one branch of knowledge can master the general principles of another with great rapidity. There are, no doubt, some subjects to which this does not apply. In the case of the classics, for example, the labor of learning the language before the literature is reached is so great that it hardly seems worth while to try to teach the elements of Greek and Latin in college. But in most subjects the reverse is true. Harvard has long offered certain general courses in elementary science that have proved invaluable to many students, by giving them an insight into the processes of scientific analysis which they would never have acquired in any other way; and a proposal to abolish these, and substitute scientific work in the preparatory schools, would be a serious menace to the cause of liberal education.

Another matter of a kindred nature that impresses a layman is the age of entrance to college. There is a freedom about collegiate instruction, and about the whole atmosphere of college life, which does not exist either in the preparatory or the professional school. Yet two forces are at work that tend to shorten that life. On one side the age of entrance has been increasing, for although the average at Harvard has been lowered of late years, this is due, as the President points out in his last report, largely to the diminution in the number of abnormally old men; and in fact the table annexed to the report shows that the average age of the men between seventeen and twenty has not decreased. On the other side, the growth of technical knowledge has lengthened the time required for professional training, and has produced a desire to steal a part of that time from the college course. Now the age at which men begin their professional practice cannot be carried any higher than it is to-day, and indeed, in the case of medicine, it is too high already. The preparatory schools ought, therefore, to endeavor to reduce the age of entrance, and this would not seem to be impossible. A teacher once remarked to me that the loss of time in education begins in the nursery, and it is clear that the children of the rich go to

the primary schools excessively late. By bringing them in earlier, and increasing somewhat the rapidity of instruction, it surely would not be difficult to get boys ready for the examinations sooner. My own observation leads me to believe that a young man of seventeen is quite capable of getting the full benefit of college, and that in spite of the nightmares about early dissipation which distress loving parents, he is at least as likely to resist temptation then as when he is older.

At all events it is probable that, if the age of entrance is not reduced, the time that might be saved at school will be taken from the period when education is the most valuable, that is, during the years in college.

A. LAWRENCE LOWELL

BOSTON, MASS.

Professor N. S. Shaler, of Harvard University, after some general remarks relating to the history of the Association, spoke as follows on "The articulation of the upper and lower parts of the Educational system":

The proceedings in the meeting this morning have given me satisfaction, in that they have shown that the members of this association of teachers are disposed to magnify their office by looking forward to the larger accomplishments which they may hereafter attain in their work. It was a very great pleasure to note the largeness of the considerations which were brought before you. They were indeed such as relate to the development of our society, the hereafter of our commonwealth, and the betterment of our kind.

The attentive observer has of late had a chance to note the curious way in which the problem of education has taken hold even of the inconsiderate people of this country. The misguided folk who of late have been clamoring for war, have found a new argument in favor of this greatest of ills in that the experience which it gives men is in a high degree *educative;* that the full powers of a man cannot be brought forth save by the training which is afforded amid the drums and tramplings of conquest. As yet the scheme of education in campaigns has not been organized, and therefore the details of the project from a pedagogic point of view are perhaps not

open to criticism. We who know, however, how impossible it is to deal with the questions of this nature in a general way, may fairly invite the advocates of this new method of turning evil to the account of good to present us the details of their plan. In the presence of the head of this university, who has done so much for the development of freedom in the higher education, I must suggest that the use of war for moral and intellectual advancement should be left optional with the student, and that furthermore there should be at the outset at least, two electives in this department, one in foreign and the other in civil warfare. It is my individual opinion, based on some small experience in the matter, that a course in civil war, though somewhat costlier to the state in the matter of laboratory practice, will be found to have considerably more educational value than that in which the student limits his vivisection to foreigners whose dying speech he is not likely to understand. I am quite sure that the development of the sympathies, which is now so fitly made the object of education, can be much better accomplished where the student turns over the dead of the enemy in his search for his kindred and friends, than where he passes them by as total strangers with whom the account is settled when the slaying is done. It must be said, however, that in this matter I speak under correction, for I lack experience in foreign warfare, not having pursued an elective in that branch of the subject.

Putting aside this lighter matter, let me come to what is perhaps the more serious part of our consideration. I find this in the important effort which this society is making to fill in the ancient still-existing break between the upper and lower parts of our educational system. This system of education, which we have inherited from the past and are striving to better, began in the upper plane of an aristocratic society. When our people first came to this country, they had in general clear concepts as to the nature and value of such academic education as the learning of their time afforded. Their notions as to the extent and methods of the primary and secondary culture were not yet worked out. Hence it has come about

that, while our colleges are directly inherited from those of the mother country, our common-school system has developed independently, and, on the whole, with no plan which may serve to relate it with the institutions of higher learning. In certain ways these two grades of schools have grown toward each other, but there is still an unhappy interval between them. If we had lived under a beneficent despotism in education, such as exists in France, that interval would doubtless have been filled in by authority; but happily for the larger interests of liberty, we are so placed that if it be closed at all, it will be by a natural growth.

It is the admirable purpose of this association to so arrange the Jacob's ladder of education that our people may find an unbroken way from its base to its summit; so that the youth of talent shall have a free, a beckoning opportunity to go upward as far as his talent and his ambition may lead him. The question before us is, How far institutions such as the university from which we take our name can help to unite our American educational system, so that it may bring about the best end of a democracy—an insurance that every youth, man or woman, shall have an opportunity to attain an education proportionate to the share of talents which nature has bestowed. We may boast as we please in an idle way about the equal chances of life in this country, but such equality will not exist until our education provides it.

Although the teacher in this university finds in its motives many things which serve to give hope and fervor to his work, it seems to me that the greatest stimulus that comes to him is to be found in the recent enlargement of its motives in all that relates to the education of our American people. I remember that after some recent political overturn—I don't remember which way it went, whether from Republican to Democratic or from Democratic to Republican—some aggrieved politicians asserted that the change was brought about by Harvard College and the slums. Although the association was at first taste offensive, the after-flavor is distinctly agreeable. I like to think that the influence of this institution has gone so far

that the boss finds it diminishing his power in the darkest places of our life.

You know already of sundry ways in which this university is working—I will not say downward, for that word does not supply the true index of direction—but rather abroad in American education. The work of our summer school for teachers, the parent of all such institutions in this country and Europe, the schools examination board, a fit share in the co-operative work of the Committee of Ten, and our own association of teachers, are already patent. Let me tell you of one more advance which promises to lead far. About six weeks ago the masters of the secondary schools of this neighborhood were asked to come to Cambridge, in order that they might give their advice to the Administrative Board of the Lawrence Scientific School—which is now, in effect, through recent changes, essentially a part of the old college—as to what could be done to lift the requirements for entrance to that school, and as to how the work should be effected so that it might best help the interests of secondary education. The result of that invitation was a meeting of fifty or more schoolmasters, who gave the board extremely good advice which is now being elaborated into a project which promises to afford the basis of a better relation between the university and the fitting schools than has yet been devised. The aim of the plan is to take into account in our entrance requirements all the higher work of the secondary schools. I personally hope that it may extend from shopwork to Greek, on the theory that it is not so important what the student does as how he does it, and that we wish all the possibilities of his intellectual development to be attended to. If this plan can be arranged, and there seems, at present, reason to hope that it may be, we shall then have at least one gate by which the graduates of our secondary schools may find an uninterrupted path into the several branches of the university.

The following motion was passed without a dissenting vote shortly before the Association adjourned. Voted: That the Association express its general approval of the plan referred to by President Eliot for securing uniformity of college admission requirements, namely, that a Board of Examiners organized by a group of leading colleges be established, with a view to securing uniform admission requirements by subject and a more uniform enforcement of requirements.

PAUL H. HANUS, Secretary.

V

THE SPIRIT AND IDEALS OF THE UNIVERSITY OF MICHIGAN, (II)

The catalogue of 1852–53 contained the following: "An institution cannot deserve the name of a university which does not aim in all the material of learning, in the professorships which it establishes, and in the whole scope of its provisions, to make it possible for every student to study what he pleases and to any extent he pleases. Nor can it be regarded consistent with the spirit of a free country to deny to its citizens the possibilities of the highest knowledge." This statement was accompanied by the promise that at an early date graduate courses of lectures would be opened; and, as a matter of fact, twenty courses of such lectures were announced the same year. One mark of German influence at this time is the great prominence of "lecture" and "lectures" in the university publications as compared with contemporary documents of the same sort. But for the time little came of this attempt to anticipate the future. Neither the university nor its constituency was then ready for real university work. Still from this time the university courses stood regularly in the catalogue. It would appear that some of these lectures were given the ensuing year, for we read: "The university course is already, in part, opened in the Department of Science and Literature, where courses of lectures are given for those who have graduated at this or other institutions, and for those who in other ways have made such preparations as may enable them to attend upon them with advantage. These lectures, in accordance with the educational systems of Germany and France, will form the proper development of the university, in distinction from the college or gymnasium now in operation." From this time on the names of students answering to this description are met with each year. From 1867 to 1878 from four to

fifteen resident graduates were enrolled annually. The last of these dates was another turning-point in the university history. The credit system was introduced, the rigidity of the four-year curriculum was much farther relaxed, and courses of advanced electives were offered to undergraduates. The real university idea was now taken up again, and with a zeal and resources that soon led to practical results. In no long time courses especially adapted to the needs of graduate students were offered, and the number of such students began to increase. Graduate work was carried on rather informally until 1892, when the Graduate School was duly organized, and placed under the management of an administrative council consisting of the heads of departments of the academical faculty. This step has led to the fuller separation of undergraduate and graduate work. The aggregate number of graduate students is relatively small, of course; at the same time their influence has come to be a considerable factor in the life of the university.

The same catalogue that marks the advent of Dr. Tappan in so many other ways informs the reader that the degree of Master of Arts will no longer be given in course, but will be conferred only upon Bachelors of three years' standing who shall pursue professional or general studies and pass an examination and read a thesis before one of the faculties. It is not now easy to tell how rigorously this promise was kept, but it is certain that the second degree was conferred upon graduates engaged in teaching or in professional studies without any examination whatever after this time. It was not until 1877 that the university resolutely set its face against granting the Master's degree in course and demanded of all candidates for those degrees real studies and real examinations.

The quick response of the authorities to popular feeling in respect to studies, or the liberal policy that they have pursued, has largely contributed to the upbuilding of the university. The acting-President in 1870 congratulated the Regents on the happy escape that had been made from the battle of the studies, which had so sorely vexed the peace of so many higher

institutions of learning. Himself an accomplished humanist, and the honored head of the Latin department, he did not hesitate to say: "Had we persisted in maintaining, in exclusive possession of the ground, the old classical curriculum—so admirable in itself, and so perfect as a discipline antecedent to the university, yet always claiming to be the very substance of the institution, and obstinately resisting all new courses as rivals, or else admitting them only to a subordinate and almost menial position—we should have witnessed here that false and foolish antagonism which elsewhere has been provoked between classical and scientific studies, and which in a broad and liberal and true university would be absurd, and even impossible; and we should have found our university, or what in our old colleges is the same thing, its academic department, intrenched and fortified against all progress and itself the most obstinate foe to its own advancement."

Antecedently to a practical test, it might perhaps be thought that a State university would tend to low ideals of study and scholarship, as well as to a wide field. Experience does not sustain this view. Modern courses of study, practical courses, popular courses, if you will, are one thing; low standards of scholarship, or attainment, are quite another. The two things may go together, but not of necessity. Nor are Greek, Latin, and mathematics synonyms of thoroughness. The popular element has never been a drag upon the higher culture studies. On the contrary, the effort of the university to provide free teaching in those studies has been fully recognized and responded to by many of that class of citizens who could not otherwise have expected to see their children pursue those studies. The university has been considered, and is still considered, a bulwark of classical studies in the West. Efforts to raise the level of scholarship have commanded popular approval. Perhaps the first place where we should search for confirmation of the idea that a State institution is likely to incline to low standards, is professional schools. Here the facts tell their own story. In the Department of Medicine and Surgery the course has been successively raised from two years

of six months, to two years, three years, and four years each of nine months. In the Law School the course has been extended from two years of six months to three years of nine months. In the Homeopathic College, the School of Pharmacy, and the Engineering Department the courses are four years, and in the College of Dental Surgery three years. There is little profit in comparing institutions that have grown up in such different environments as the old colleges of New England and the new universities of the West. It will suffice to say that while the modern, material, and practical elements of life may have secured larger recognition in the latter than in the former, the ideal elements have been by no means forgotten or undervalued. The influence is reciprocal; the university lifts up the State that maintains it.

Still other features of the free policy of the university should be mentioned. One is the total absence from the beginning of a marking system and a hierarchy of college honors, and a supreme reliance on natural incentives to secure study and win scholarship. Strictly congruous with this is the habit of throwing the student upon his honor and good behavior in respect to matters of college order and decorum, assuming that he is worthy of respect and confidence until he proves the contrary. College morals and manners have steadily improved at Ann Arbor, as at the other great institutions of learning; to apportion this improvement among the various causes that produced it would be difficult; but the free system that has been pursued, at least for many years, is no doubt an important factor. While the abolition of the dormitory system may have diminished college spirit, it has worked in the same direction. The same may be said of the practical disruption of the class system, owing to the general introduction of electives. Still another cause of the amelioration was the advent of women, which has certainly tended to the extirpation of the grosser forms of disorder. The early rule which required the attendance of students at church disappeared years ago, and such attendance became wholly optional. Daily attendance of students at prayers in chapel was required until

1872; then it was made voluntary. Last year daily prayers were discontinued, and a semi-weekly vesper service of a more elaborate character, conducted in University Hall, was substituted in their room, as is believed with advantage, attendance still remaining voluntary.

The year 1852–53 is marked by another novelty. It had been felt from the first that a theological faculty could not be established in a State university. Dr. Tappan now expressed the hope, which he often renewed in after years, that schools of theology might be founded at Ann Arbor. The different denominations, he said, might unite to establish common professorships in some departments of theological science; in other departments they would naturally choose to have separate professorships; but there would be obvious advantages in bringing all the learned faculties together at the university, around one general library, where students could, at their pleasure, attend university lectures while pursuing their particular professional studies. While this conception has never been realized, the independent halls, guilds, and Bible chairs, with their courses of lectures which several denominations have founded, are at least a partial fulfillment of the promise.

The question has been often asked whether, in the end, the States would give the State universities such generous support and such wise oversight as would secure for them first rank among the universities of the country. A still narrower question is: Will the States accord a liberal support to graduate study, or to real university work? Will the people favor the progressive elevation of these schools to real university rank? Or, on the other hand, will they insist upon their continuing, for the most part, to do mere gymnasial work, and so to remain mere popular colleges? What will the ultimate State university ideal be? It would be foreign to the present purpose to discuss this interesting topic. There seems no reason to fear that public opinion will require these universities to recede from the most advanced grounds that they have taken. In Michigan the past is secure. But while the State thus far has met all reasonable expectations, it cannot be held

that the ultimate problem has been solved. The Graduate School is a question of the future, with a happy augury.

Still another question remains for the future to answer. This is whether a State-founded and State-managed institution of learning will draw to itself generous gifts of money and material from private givers, or whether such givers as a class will prefer to assist private institutions. This is an important question; no State is likely to deal with its university in a spirit so liberal as to make generous gifts a matter of indifference. There are citizens of Michigan who believe, rightly or wrongly, that the university has practically reached its maximum development as a State-supported institution. They say the time has come for men of wealth to come forward, bringing private gifts and endowments. Such views are sometimes met with in the press of the State. It would be curious to inquire whether these persons, or the same class of persons, did not entertain the same opinion ten or twenty years ago. However this may be, the university has received private and local gifts amounting to a half million dollars, and these gifts are commonly regarded as a prophecy of more abundant ones to be made in the future.

Perhaps what has been said relates too much to the external life and too little to the internal life of the university. While it is too late, if that be true, to mend matters much, a more searching inward glance may be given at the close.

The university campus, with its array of buildings constructed with small reference to beauty, and some of them with scarcely more reference to convenience, its numerous faculties, and its great army of students, presents to the observer an interesting subject of study. Altogether the faculties and students are a strong organization of intellectual life. Six professional schools, some of them among the best known of their kind in the country, with an equal number of professional faculties, are grouped around the academical faculty. Among the professors the old-fashioned "all-around" scholar is hardly to be found. Not only faculties, but professors within the same faculty, tend more and more to fall apart as special-

ization goes forward. The relations of teachers turn quite as much upon personal qualities as their departmental affinities. While, commonly speaking, the students enrolled in the professional schools are fitting for professional life, a considerable number of law students, and probably an increasing number, are looking ultimately to business rather than to the bar. But the heart of the university beats in the Department of Literature, Science, and the Arts. The literary students were first on the ground; their work is the most fundamental; they more than equal in number all others put together, and, although the other groups contribute characteristic elements, these still give the university its prevailing character. Again, the literary students as a body combine many and varied elements. Graduate students, while tending to absorption in their own specialties, and so to segregation, still mix with the upper classmen in lecture room, laboratory, and library, and exercise a strong and growing influence in turning the attention of undergraduates to graduate study. Candidates for different degrees meet in the same courses so far as these are common to them. If, as the classical professors would probably claim, the A. B.'s taken together are the strongest group of students on the ground, still their superiority is not very observable to professors who meet them in other lines of instruction. In fact, some strong students find an especial attraction in some of the other courses, which offer a wider range of electives.

The effects of electives are seen in many ways. Students vary widely in scholarship in the same studies, as well as in the choice of studies; the extremes of scholarship may not be further apart than formerly, but they tend more strongly to the extremes of the scale. It will hardly be denied by experienced college men that the old system kept classes more closely together than the elective system. Some students are preparing for professional schools or professional life; a still larger number perhaps are getting ready for teaching; some do not know just why they are in college, for the very good reason that they are not there for anything in particular; while another class, and a large one too, are

in the pursuit of a liberal training as a general preparation for life. This analysis applies to the women as well as to the men, only it must be stated that, relatively speaking, the women are less numerous in the first and third of these classes than the men. The students respond to the common motives that move and inspire students in other universities. The tides of interest and feeling rise and fall much the same in all colleges, only in the very large ones students are less apt to become strongly attached to their instructors, to one another, and to Alma Mater. The question whether a State institution binds students to itself as strongly as a private one is interesting, but cannot be here pursued. The scale of social conditions is somewhat wide: the farm, the village, and the city, rich families, poor families, and those in moderate circumstances, are all represented. In former years the university, certainly as compared with the great schools of the East, was a poor boys' college; it is so to-day; but the rapid increase in wealth, and the marked elevation of the standard of living, have made, and are making, changes that are welcomed by some persons, deplored by others, and witnessed with conflicting feelings by still others. Apparently the athletic spirit is rising, and the Greek-letter influence, if it be not growing, is assuming more tangible forms, with results that are estimated in different ways by the older professors. The general introduction of electives has broken down the class spirit to such an extent that there are only two days on which the "class" is a matter of real interest, one being the day on which the class officers are chosen, and the other the day on which they appear in their official capacities under the Tappan Oak. It is possible that the relative number of students who do not know just why they are at the university is increasing; but the whole body represents a high average of purpose, application, and attainment. Of application, perhaps the best test is daily observation of the students who throng into the amphitheatre of the General Library to engage in general reading or to follow up the clews and references that their instructors have given them.

Michigan has always been a teaching university; the key-note has been instruction and not research. Conditions that are obvious without being enumerated, separate and apart from theories and ideals, have worked effectually to that end. At the same time much valuable original work has been done by members of the various faculties in the libraries and laboratories. The catalogue of the collection of books sent by the General Library to Chicago in 1893, with a view of showing the entire literary output of the university, while incomplete and unsatisfactory, still embraced the names of nearly one hundred authors who have taught in the university, and many hundred titles. But this is not all; research is a means of instruction. The seminary mode of teaching was first introduced in the year 1871–72 by Mr. C. K. Adams, then Professor of History. It had been suggested to Professor Adams by his study on the ground of the *Historische Gesellschaft* of the German universities. A little later the Professor of English Literature followed the example thus set. The name seminary, however, does not appear in the catalogue for several years—perhaps because the authorities were afraid of it. In time other professors fell into line, and for the last fifteen years the seminary has formed an important part of the machinery of teaching. There is good reason for thinking that no other American institution of learning introduced the seminary method at so early a date.

It is not improbable that some readers of this sketch will think that the university history, as recounted, abounds in large exaggerations of plan and promise. This is not at all strange. The first charter may seem curiously out of place in the Northwestern forests, while President Tappan's plans were far in advance of his time, being quite disproportionate to the means in his power for carrying them out. But it must be remembered that the year 1817 belongs to a time of inflated language; that great founders always draw large drafts on the future, their greatness appearing in their discernment of future possibilities; and still further, and what is even more to the purpose, that these large plans and promises

were in no case borrowed from what American colleges and universities were at the time doing, but were always either the most advanced ideas of the time or distinct anticipations of the future. The American State university of to-day is the embodiment of a distinct idea. It is quite different in origin, maintenance, and ideals from the college of former or of present times. It has rooted itself strongly in more than half the States of the Union. It is keeping even pace, and promises to keep even pace, with these States in the progress of civilization. It is not unnatural, therefore, that Michigan men should reflect with some pride that, although their university is not the oldest of the State universities, it was the first to attract attention and to achieve large influence, and that it has furnished the general type to which not only the younger universities have conformed, but also the older ones, so far as they have proved to be largely successful.

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VI

PROFESSOR JOHN DEWEY'S DOCTRINE OF INTEREST AS RELATED TO WILL[1]

One of the most valuable contributions to pedagogy thus far published by the Herbart Society is printed in the *Second Supplement to the Herbart Year Book* for 1895. In this document of thirty-eight pages Professor John Dewey makes a critical analysis of the idea of interest and discusses its relation to the will. It seems to me much the most valuable discussion of all that have appeared on this important subject. Professor Dewey thinks profoundly and writes luminously. His views nearly always provoke dissent, but a fruitful dissent. They open the subject in such a way as to lead the reader to take broader views, and sometimes to see new grounds on which he can defend his own previous thought. This is the remarkable feature in Professor Dewey's articles generally, and especially in the present article under consideration. He hits upon a new method of analysis of his subject which assists his reader in rethinking the problem. A series of fresh thoughts on this subject will arise in his mind and he will thank Professor Dewey, even if he still finds himself obliged to disagree with the conclusions drawn in the treatise before him.

I shall not attempt an analysis of this *Supplement* because an analysis would not do it justice. It is the special treatment of each item that is most valuable in this paper. Its logical structure of the whole is not so helpful. The acute analysis and sharp criticism of opposing views with regard to interest and with regard to the theory of effort; the doctrine of discipline; the stimulation and dissipation of energy; the direction

[1] *Second Supplement to the Year Book for 1895:* Interest as related to Will, by Professor John Dewey of the Chicago University. Edited by Charles A. McMurry, Secretary of the Herbart Society. Pantagraph Printing and Stationery Company, Bloomington, Ill., 1896.

of the attention of the child to his immediate surroundings or to a continuous investigation which summons before it the material which it has chosen to consider and neglects distracting things and events; the interest based on amusement and the interest based on genuine intellectual insight; these and many more things are very instructive. Still more instructive is the attempt of Professor Dewey to bend the doctrine of the will as original self-determination into—or affiliate it to—a form more favorable to the Herbartian doctrine of interest by the use of the technical term "self-expression." "An interest is primarily a form of self-expressive activity" says Professor Dewey: "if we examine this activity on the side of the content of expression of what is done, we get its objective features, the ideas, objects, etc., to which the interest is attached, about which it clusters. If we take into account that it is self-expression, that self finds itself, is reflected back to itself, in this content, we get its emotional or feeling side."

Here the will as a self which originates modifications in the stream of causality within which it finds itself, is looked upon as a self-expressive activity. Self-expression suggests interest. In fact it furnishes a ready-made definition for the fundamental interest of all interests. The self desires to express itself in order that it may become conscious of itself thereby. The self builds in the world of time and space an expression, a revelation, of itself; it in fact duplicates itself, makes itself an object for itself. This at once grounds the doctrine of interest on the most fundamental basis, the most spiritual that can be named.

One is reminded of the position of Hegel in his *Philosophie des Rechts*, who treats the will as a transcendental originator of new determinations in space and time and as a continual act of self-revelation. Hegel loves the form of the epigram, and especially that form of it which is pointed with tautology. Hegel sums up the world of morals and of political and social rights as the creation of the will in its attempt to will will. "The will wills will." In this whimsical epigram Hegel has indicated the profoundest of all insights into rights and morals.

He himself had discovered in it the key to the world of human nature and of material nature in his "voyage of discovery," *The Phenomenology of Spirit.* He found in that work that "revealed religion" is the religion of *a revealed God*, and not specially the religion which is communicated by any divinely inspired revelation. All the heathen religions teach a hidden God, who transcends not only humanity, but also intellect and will. The heathen divinities cannot reveal themselves in their fullness. But it is the expressed doctrine of Christianity that the true God reveals himself in all his fullness in the "Son of Man," not withholding anything as too high for revelation to his creatures. Plato and Aristotle saw clearly that if reason is the absolute first principle it must reveal itself in its fullness; hence they both say, "God is without envy"; meaning that God does not hold back anything as essentially above and beyond revelation. Therefore the Divine will wills into existence itself, reveals itself fully in another will—the will wills will. Hence arise images of the Divine in the world. God makes man in his own image: a living soul, a transcendental will also. God, as will, has willed wills. Now human wills have the same calling to express themselves, to will into existence a revelation of themselves as wills. Each human being therefore hungers most deeply to express his will in this universe and to make his mark, so to speak, upon time and space by so much as he acts with his will power upon the world; by so much as he becomes conscious of himself in experience. And his elementary consciousness is elevated, by means of thought and reflection upon his action, finally into what is called pure thinking by Hegel and Kant; into what is called by Aristotle θεωρεῖν and by Plato Ἀνάμνησις or reminiscence. This highest or pure thinking is the completion of the consciousness of the will. The will has expressed itself, and it has thought its way back to its pure self-determination. It has comprehended itself and become self-conscious. Aristotle's expression, Theoreia, may be translated *pure insight.* Plato's expression, Reminiscence, poetically implies that the self which was at the beginning of the progressive self-revela-

tion is really found again at the end of it, and that consciousness is a sort of recovery of the true idea of itself.

This glib technical term, "self-expression," evidently has in the mind of Professor Dewey all of these implications and suggestions. He shows in the course of his paper that he sees the necessity of mounting from interest to a higher principle. Much of the Herbartian literature takes interest as an ultimate principle and does not become aware of its own procedure. For since many kinds of interest are denounced, the Herbartian begins to limit it to the sphere of moral interest, and to such subsidiary rivulets of interest as flow toward moral interest.

Here we come to the essential knot of the difficulty, which is this: The use of the general term "interest" leaves the Herbartian principle in an indeterminate form. I use the expression *indeterminate*, because the principle does not define sufficiently its content. For interest covers good, bad, and indifferent interests. Not so, however, with Professor Dewey's theory: with his introduction of the term "self-expression" he has introduced a higher and defining principle. Interest that lies along the line of self-expression is the desirable interest. The interest should be such that it appertains to this fundamental act of revealing the Divine will in the world—self-expression of all that is highest. Here interest is subordinated to a higher category, the Divine will or the self-expression of reason.

Much of what I have just named as the difficulty with the Herbartian doctrine has come in through this fact of the indeterminateness of the principle of interest. Interest has at first been commended in general terms—as if any or all sorts of interest are good. But immediately the Herbartian teacher has been compelled to draw limits, and in the end to confess that there are some interests which are directly in the line of the highest good; that there are other interests which are bad and lead only to the bad; and that there is a third class of interests that lead toward the good but by winding paths, reaching the good although through much tribulation and much that is bad or at least indifferent.

Looking at the career of man on the earth as a whole we say that human life is a discipline in individuality. The highest individuality will be obtained through righteousness and holiness in action, and through a knowledge of the ultimate truth in regard to the objects of the world and their final purpose. It is evidently not the object of human life blindly to conform to the Divine will. Individuality must get an insight into the rationality of the Divine will and thereby make it its own innermost conviction. The Divine will does not create the world in order that there may be an infinite number of puppets. God wishes to be reflected in his intellect and in his freedom; he therefore makes in the world a state of things which continually piques its inhabitants ever to discover deeper and deeper grounds and reasons for things as they are, and for the ethical standards which furnish the ideals by which things and events are to be reformed.

There is the same difficulty with the term "interest" that there has been with the term *pleasure* or *happiness*, taken as a technical term for the highest end of man. Hedonism is a doctrine which has played a greater part in the history of ethics. It is not of any use to attack hedonism by asserting that the true end of man is not happiness or pleasure. Any end that you may name, other than happiness or pleasure, will be at once cunningly seized upon by the Epicurean. He will inquire with a smile whether your highest object and aim in life does not secure the greatest sum of pleasure and happiness in the long run? Your affirmative answer seems to him a fatal admission of the triumph of his principle. So, with regard to the doctrine of interest which affirms that the pupil should be developed through his interest; that interest in short should be the first principle of the teacher; that he must make it his first and foremost endeavor to interest his pupils in what they are studying. If you point out a higher or highest object in studies—namely the acquaintance of the pupil with the rational order of the universe in which he lives; the attainment of wisdom and holiness—the advocate of interest will inquire with the same covert sarcasm whether this is not to be

made interesting to the pupil—in fact whether it is not really the most interesting of all things, if rightly taught? The refutation of hedonism is not to be found in setting up an antithetic principle. It is not happiness, nor non-happiness, that should be regarded as the highest aim of man—"happiness is not," although Mr. Pope supposed it to be,"our being's end and aim."

The refutation of hedonism may be made without the fear of self-contradiction, if one approaches the subject by considering the undetermined character of the term "happiness"; taking note of the fact that happiness includes all grades and kinds, namely a temporary happiness which is followed by a permanent injury to the soul as well as a highest happiness which leads through manifold trial and suffering to eternal blessedness. It is evident that happiness does not contain within it the determining principle: it demands a higher principle in order to correct its own indefiniteness and vagueness. It is, to use the language of Dr. E. E. White, a "blanket" term. Under this blanket lie good, bad, and indifferent forms of happiness, and the person who sets up happiness as his highest principle must forthwith mention what kind of happiness he means. In order to define his chosen field of happiness, he must bring in a higher principle which relates to man's origin and destiny and to his realization of the Divine will in holiness and in the knowledge of truth. Then he will have introduced and justified his term "happiness," but at the same time will have subordinated it. Happiness is in this way proved to be a secondary principle by its own advocates.

Just so the principle of interest is a subordinate principle and it is shown to be such by its advocates, who attempt to point out what realm or sphere of interest is proper and to be encouraged. They make a study of the child's interest, and looking out upon the universe toward the careers which will arise from different species of interest, they select the kind of interest that leads in the surest manner toward human perfection in will and intellect. They also study the other kinds of interest and find out which of them will tend wholly toward

the bad, and likewise which of them will lead by circuitous paths toward the good. In this way the Herbartians, and other advocates of interest as a principle of education, subordinate the principle of interest to a higher principle, namely the rational perfection of man, the attainment of full self-expression; the realization of the reasonable in this universe and the attainment of full self-consciousness; the discovery of the Divine as the final end of human endeavor.

Professor Dewey, as I have pointed out, saw this defect in the principle of interest from the beginning and provided for it in the philosophical groundwork of his thesis.

Dr. White calls interest a "blanket" term. Taken as indeterminate, it includes all kinds of interest and does not define any special form of it as the interest to guide exclusively in education. But on ascending to a higher principle in order to find a criterion for what to choose or avoid, interest becomes subordinate and also at the same time helpful. We first search for the rational purpose of civilization and we define the great objects of education in view of those purposes. Man reveals his true nature not as a child but as mature men and women, in the process of making world history. In the world history human nature is revealed in its height and depth. The objects of education become clear in its light.

Having selected as desirable goals the rational results in will and intellect, in manners and customs, habits and branches of knowledge, we have taken our first step in the theory of education. The next one, however, brings in the question of interest as a subordinate one. It says, "Now these high aims and objects must be made interesting to the pupil." He must feel that he is expressing himself in attaining these objects. Then interest appears again in a third form subsidiary to the second. This is child-study. For it now becomes necessary to study the child in order to find out what his actual interests are. We hold these actual interests up in the light of our first principle and see which of them lead directly to the highest education. We see likewise which of them are immediately and directly opposed to the highest education. Then

we enter upon a large field of interests which are not obviously one or the other. Many of these will be found to lead indirectly to the highest. A perfect natural history of this field of interest will be of very great service in pedagogy. Froebel has himself contributed more than anyone else to this knowledge, but I do not see why it is not possible for the Herbartians to equal if not surpass Froebel by making discoveries and mapping out orbits in all stages of human growth from birth up to the close of the mortal career. It is evident that we must not only inventory and define the interests of the child, but that we must trace them through their entire evolution and discover whither they lead.

Goethe has said in his *Wilhelm Meister* that "Steep regions are only to be surmounted by winding paths." That whole book, *Wilhelm Meister*, is a tractate on education in the broadest sense. It utters the watchword of this epoch in which we find ourselves. Every individual is called upon to cultivate himself in order that he may enter into his heritage of the wisdom of the race. Goethe's insights into that middle ground of interests which contribute indirectly to the growth of the pupil are the most valuable contributions to education in modern times. Some highest things, like the steepest mountain tops, are to be approached only, or at least in a much more feasible way, by winding paths. Here is a very great question for pedagogy, and the Herbartians claim to have already pre-empted the field. All other schools of pedagogy will ask permission to assist in this great enterprise. Hitherto it has not been possible to secure a good understanding between them and the followers of the established order. But I believe that a new study of interest in the light of Professor Dewey's discussion, will lead to a mutual understanding and hearty co-operation. Interest must be acknowledged as subordinate to the higher question of the choice of a course of study that will correlate the child with the civilization into which he is born.

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VII

CONCLUSIONS AS TO UNIFORM COLLEGE ENTRANCE REQUIREMENTS, REACHED BY THE CONFERENCES HELD AT COLUMBIA COLLEGE, ON FEBRUARY 1, 1896, AND THE FOLLOWING DAYS

The colleges represented were: Harvard, Yale, Princeton, Columbia, University of Pennsylvania, and Cornell. Six representative secondary-school teachers were members of each Conference. The full membership of the Conferences is given in the EDUCATIONAL REVIEW for March, 1896, pp. 305–307. The conclusions of each of the six conferences were unanimous.

LATIN

1. In any modified Latin requirements which may be recommended by this Conference, there should be no increase in the present requirements for admission to Yale and Harvard.

2. It is the sense of this Conference that the examination in authors should consist in part of tests on prescribed work and in part of tests on "unseen passages."

3. This Conference adopts as its recommendation concerning Grammar, I, b, II, 1 (so far as it relates to Grammar) of the Recommendation of the Committee of New England Colleges, (which read as follows):

I, b, "A thorough examination on a prescribed portion of Cicero's speeches (about 30 pages, Teubner text) directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language; the test to consist, in part, of writing simple Latin prose, involving the use of such words, constructions, and idioms only, as occur in the speeches prescribed."

II, 1, "The translation at sight of passages of Latin prose and verse, with questions on ordinary forms, constructions and idioms, and on prosody."

4. The Conference recommends that changes be made from time to time in the authors or books, or both, prescribed for admission to college.

5. The Conference recommends:

(1) That the amount of Cicero to be read in the preparatory schools be prescribed as follows:

In Cat. I, II, III, IV; *Pro. Leg. Manil.*; *Pro Arch.* or *Philippic* XIV.

(2) That the amount of Vergil be Books I–IV of the *Æneid.*

6. The Conference recommends:

(1) That there be a sight examination only in Cæsar and Nepos.

(2) That there be a sight examination on passages chosen from Cicero's Orations.

(3) That the sight examination in Latin verse consist of average passages chosen from Vergil and from Ovid's *Metamorphoses.*

7. The Conference recommends that the examination in prose composition be the translation into Latin of a connected paragraph, based (for the three years beginning with 1898) upon passages selected from the Second, Third, and Fourth Orations against Catiline.

8. The Conference recommends that the foregoing requirements go into effect in the year 1898.

GREEK

The following requirements in Greek were unanimously recommended by the Greek Conference.

I. *Grammar.* A thorough knowledge of the common forms, idioms and constructions, and of the general grammatical principles of Attic prose, to be tested by an examination on a prescribed portion of Xenophon (for the next five years Xenophon's *Anabasis*, Books I and II). The test is to consist in part of questions, in part of simple sentences set for translation into Greek; it may include also translation from Greek into English.

II. *Attic prose at sight.* Ability to translate at sight a passage adapted to the proficiency of those who have read not less than 130 Teubner pages of Attic prose. The candidate is expected to show in his translation an accurate knowledge of the forms and structure of the language, and an intelligent comprehension of the whole passage.

III. *Homer.* Ability to translate a passage from some prescribed portion of the Homeric poems (for the next three years, *Iliad*, Book I and Book II, vv. 1–493), and to answer

questions designed to test the candidate's understanding of the passage, as well as question upon poetic forms, constructions, and prosody.

IV. *Homer at sight.* Ability to translate at sight a passage of ordinary difficulty from the *Iliad* or *Odyssey*, with the aid of a vocabulary of the less usual words.

V. *Composition.* Ability to translate into Attic prose a passage of connected English narrative, employing the more common words and constructions of some prescribed text. (For the next five years a candidate will be allowed his choice between a passage based on Xenophon's *Anabasis*, Books I and II, and a passage based on Xenophon's *Cyropædia*, Book II, Chaps. I to V, inclusive.)

Note 1. The work necessary for I and II, at least, can be done in two years, and may be offered for preliminary examinations.

Note 2. The requirement for composition (V) is here included among the subjects of the third year, because the Conference believes that it is well for a candidate to keep up his study of Attic prose during that year. But this shall not prevent a candidate, when properly certified by his teacher, from presenting composition as a preliminary subject at the end of the second year.

Note 3. The prescribed passages required by I, III, and V may be arranged from time to time by agreement between the colleges.

Note 4. This scheme shall go into effect in June, 1898.

Note 5. Any college which accepts this scheme of requirements for admission may, if it deems it necessary, set also an alternative examination for any part of it.

MATHEMATICS

The following resolutions were unanimously adopted:

1. That a formal examination in arithmetic as a separate requirement for entrance be dispensed with.

2. That a knowledge of the metric system and the ability to reckon accurately are to be presupposed.

3. That the entrance requirements in algebra shall be as follows:

Factors, common divisors and multiples, fractions, equations of the first degree with one or more unknown quantities, involution including the binomial theorem for positive entire exponents, evolution, the doctrine of exponents, radicals and equations involving radicals, quadratic equations of one or two unknown quantities and equations solved like quadratics, ratio and proportion, and putting problems into equations.

It was further unanimously agreed that where the subject is divided into preliminary and final examinations, the preliminary examination shall include and be confined to the following topics: Factors, common divisors and multiples, fractions, equations of the first degree with one or more unknown quantities, evolution, the doctrine of exponents and radicals, and that the remaining subjects named shall be required in the final examination.

4. That the requirements in geometry be as follows:

Plane geometry: Including the solution of simple original exercises and numerical problems.

It is understood by the Conference that the entrance requirements above noted are the minimum requirements in mathematics, on which it is hoped that the Faculties of all the colleges concerned will agree, and that any of the colleges is to be free to make such additional requirements as may seem best to its Faculty.

GERMAN

The following requirements were unanimously adopted:

In elementary German. (*a*) The rudiments of grammar, and especially with these topics: The declension of articles, adjectives, pronouns, and such nouns as are readily classified; the conjugation of weak and of the more usual strong verbs; the commoner prepositions; the simpler uses of the modal auxiliaries; the elementary rules of syntax and word order. The proficiency of the applicant may be tested by questions on the above topics and by the translation into German of simple English sentences. (*b*) Translation at sight of a passage of easy prose containing no rare words. It is believed that the requisite facility can be acquired by reading not less than two hundred duodecimo pages of simple German.

Practice in pronunciation, in writing German from dictation, and in the use of simple German phrases in the classroom is recommended.

Preparation for the elementary requirement need not call for more than one year's instruction of five periods per week.

In advanced German. (*a*) More advanced grammar. In addition to a thorough knowledge of accidence, of the elements of word-formation, and of the principal uses of prepositions and conjunctions, the candidate must be familiar with

the essentials of German syntax, and particularly with the uses of modal auxiliaries and the subjunctive and infinitive moods. The proficiency of the applicant may be tested by questions on these topics, and by the translation into German of easy connected English prose. (*b*) Translation at sight of ordinary German. It is believed that the requisite facility can be acquired by reading, in addition to the amount mentioned under elementary German, at least five hundred pages of classical and contemporary prose and poetry. It is recommended that not less than one-half of this reading be selected from the works of Lessing, Schiller, and Goethe.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

Preparation for the advanced requirement need not call for more than two additional years of instruction.

FRENCH

The following requirements were adopted by unanimous vote:

In elementary French. (*a*) The translation at sight of ordinary nineteenth-century prose.

It is important that the passages set be rendered into clear and idiomatic English. It is believed that the power of translating at sight ordinary nineteenth-century prose can be acquired by reading not less than four hundred duodecimo pages from the works of at least three different authors. Not more than one-half of this amount ought to be from works of fiction. This number of pages is to include not only prepared work, but all sight-reading done in class.

(*b*). The translation from English into French of sentences or of a short connected passage to test the candidate's familiarity with elementary grammar.

Elementary grammar is understood to include the conjugations of regular verbs, of the more frequent irregular verbs, such as *aller*, *envoyer*, *tenir*, *pouvoir*, *voir*, *vouloir*, *dire*, *savoir*, *faire*, and those belonging to the classes represented by *ouvrir*, *dormir*, *connaître*, *conduire*, and *craindre;* the forms and positions of personal pronouns, the uses of other pronouns and of possessive, demonstrative, and interrogative adjectives; the inflection of nouns and adjectives for gender and number,

except rare cases; the uses of articles, and the partitive constructions.

It was the unanimous opinion of the conferees that the elementary grammar requirements represented the minimum of French grammar that ought to be required.

It was unanimously agreed that the wording of the requirements did not *preclude* the asking of direct grammar questions on the part of an institution that wished to enforce such requirement.

Note. Pronunciation should be carefully taught and pupils be trained to some extent to hear and understand spoken French. The writing of French from dictation is recommended as a useful exercise.

In advanced French. (*a*) The translation at sight of standard French.

It is important that the passages set be rendered into clear and idiomatic English. It is believed that the necessary proficiency in translation at sight can be acquired by reading, in addition to the elementary work, not less than six hundred duodecimo pages of prose and verse from the writings of at least four standard authors. A considerable part of the amount read should be carefully translated into idiomatic English.

(*b*). The translation into French of a connected passage of English prose.

Candidates will be expected to show a thorough knowledge of accidence and familiarity with the essentials of French syntax, especially the uses of tenses, modes, prepositions, and conjunctions.

The Conference, after fully discussing the matter of prescribing or even suggesting definite text-books or texts for both the elementary and the advanced requirements, were unanimously opposed to such prescription or suggestion; it was felt that it might be left to the French department at each college to answer at its discretion written requests for information on text-books.

Careful attention should be paid to pronunciation and the use of spoken French.

HISTORY

I. *Resolved*, That the colleges be requested to include in their requirements for admission a choice of subjects out of the following topics:

(1) The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art.

(2) The history of Rome to the accession of Commodus, with due reference to literature and government.

(3) English history with due reference to social and political development.

(4) American history, with the elements of civil government. It is expected that the study of American history will be such as to show the development and origin of the institutions of our own country; that it will, therefore, include the colonial beginnings; and that it will deal with the period of discovery and early settlement sufficiently to show the relations of peoples on the American continent, and the meaning of the struggle for mastery—any two of these topics to constitute a required subject for entrance to college.

The Conference expects that for any one of the four topics one year's work of at least three periods a week, or an equivalent, would be necessary.

In the judgment of the Conference it is very desirable that Greek and Roman history be offered as a part of the preparation of every candidate. If any college finds it necessary to specify the particular subjects to be required, it is recommended that these two topics be named.

II. *Resolved*, That, in addition to the examination, satisfactory written work done in the secondary school, and certified by the teacher, should constitute a considerable part of the evidence of proficiency required by the college. It is suggested that this requirement may be met by the presentation of a notebook or bound collection of notes.

III. *Resolved*, That such written work should include practice in some of the following:

(*a*) Notes and digests of the pupil's reading outside the text-books.

(*b*) Written recitations requiring the use of judgment and the application of elementary principles.

(*c*) Written parallels between historical characters or periods.

(*d*) Brief investigations of topics limited in scope, prepared outside the classroom, and including some use of original material where available.

(*e*) Historical maps or charts, made from printed data and comparison of existing maps, and showing movements of

exploration, migration, or conquest, territorial changes, or social phenomena.

IV. *Resolved*, That the examinations in history for entrance to college ought to be so framed as to require comparison and the use of judgment on the pupil's part, rather than the mere use of memory. The examinations should presuppose the use of good text-books, collateral reading, and practice in written work. Geographical knowledge should be tested by requiring the location of places and movements on an outline map.

V. *Resolved*, That the colleges (in cases where they allow history as an advanced option) be requested to accept any one of the four alternatives which follow, either as additional preparation for entrance or for advanced standing. For each of the alternatives will be necessary two years' work of at least three periods a week, or an equivalent.

1. A course in Greek and Roman history for those only who have offered English history and American history as an elementary subject.

2. A course in English history and American history for those who have offered Greek and Roman history as an elementary subject.

3. A course in the history of Europe from the Germanic invasions to the beginning of the seventeenth century.

4. A year's study of any of the elementary fields not already offered as an elementary subject; combined with a year's detailed study of a limited period within that field.

VIII

REVIEWS

Methods of mind-training, concentrated attention and memory—By CATHARINE AIKEN. With illustrations and appendix. New York: Harper & Brothers, 1896. 75 p. $1.00.

We have here the very antipodes of Herbartianism, and of everything else that we are accustomed to regard as belonging to the New Education. The methods of mind-training which this book describes and advocates are nothing more or less than exercises in formal discipline of the most formal type. This fact naturally commends the book to the lay mind, which rarely distinguishes between show and culture; and as naturally arouses "imperfect sympathy" in those accustomed to the consideration of education as a science. This fact should not, however, render it impossible for anyone to form an impartial judgment of this book in the light of its underlying theory, its end, means, and results.

The mind, as here conceived, is the tool which the student employs in mastering ideas. This tool may be whetted, as a boy whets his jackknife, in order that it may cut more easily. Time thus spent saves time. Twenty minutes a day at the grindstone more than pays for itself before night; just as a deep-breathing exercise in the morning gives deeper vitality for all day.

The specific end of this training is concentration of the attention, considered as a formal power or "faculty." The motives appealed to are innate curiosity, ambition, and a desire to excel; the enthusiasm of numbers is also counted on, though there is some individual work. The order of steps followed is, first, to quicken the perceptive faculties which lead to the power of observation and of reaching conclusions rapidly; secondly, to cultivate the habit of accuracy in seeing and hearing; and, thirdly, to cultivate the habit of discrimination.

The means to this end include exercises in numbers and arithmetic, music, drawing, spelling, and in the memorizing of

literary selections. Much use is made of the revolving blackboard for "glance-work" in recalling the number, position, and relation of objects.

There can be no doubt that the system under discussion has been brought to a point of remarkable effectiveness. Its results have been witnessed by those prominent in education and letters. A college president speaks of it with enthusiasm. "The value of such work," writes a leader in American education, more guardedly, "I should certainly think was very great." Another says, "If I could have had that training when a boy, I should have put forty years into the last twenty." Among the results claimed by Miss Aiken herself are these: economy of time and strength, shortened study hours, broader comprehension and greater enjoyment; dull minds quickened, concentration secured, and a truer sympathy between teacher and pupil attained. Through the power of concentration the pupils are enabled to gain "a large amount of information," a "broader intelligence," the ability to master "countless classifications and technical words," more quickly and easily "when heard from the teacher's lips than when set to the task of committing to memory"; "and to hold the mind steady long enough at once to compass the conditions and meaning of the question," thereby avoiding discouragement, drudgery, and fatigue.

The exercises employed are, as a rule, devoid of mental nutriment, and calculated to appeal only to the lower forms of interest. If, in the higher stages, good literature is employed, it is not dealt with as good literature, primarily, but as stuff to be memorized. Many of the exercises are so entirely on the plane of sensation that it is hard to believe that such emphasis upon such things will not tend to give a glib and artificial habit of mind. One may easily imagine the abuse of such a system. For we become what we are drilled to become; and pupils sent to a school where "glance-work" is made a specialty will tend to be specialists in "glance-work," young Houdins, instead of lovers and thinkers. Granted that the evils of the old system are as alleged. Granted, too, that this kind of mind-whetting gives quickness and a certain acuteness. Is not this power in danger of being gained at the expense of time and at the sacrifice of higher ends? Are there not other ways of revolting against ineffective formal discipline than by multiplying devices for making discipline more

effective by making it still more formal? When the new education shall have attained that degree of effectiveness which comes only with time and from trained teachers, will it not be able to attain results in character-building and mind-training satisfactory enough to render unnecessary work of this kind? The only warrant for the employment of such methods would be the proof that the mind cannot be quickened and sharpened by food rather than files. No such proof is adduced in this book, for the author takes issue only with the old system, the fault of which was that it neither fed nor filed. One point is lacking in the book which is vitally necessary to a complete estimate of its value: the relation of "mind-training" to education is imperfectly set forth. We are not told, for example, on what lines the interests of the pupils whose "minds" have been "trained" develop, and how the transition is made from the interest in *remembering*, in seven minutes' time, a passage of one or two hundred words, to the interest in the *meaning* of that passage and its relations to life. For while some virtue may reside in such devices judiciously employed in vital connection with legitimate instruction, it does not appear that they are so employed in this school, and they are not likely to be so employed anywhere. Making due allowance for the fact that the author's entire educational creed is not attempted to be given in her book, there still seems to be ground for suggesting that any book is in danger of misleading which identifies "education, moral and intellectual," with attention, and then lays emphasis only upon the formal side of attention. True, it is implied that "the teacher must labor to enlist the strongest and noblest feelings on the side of attention *to the most important and valuable subjects*"; but there is little or nothing in the "methods of mind-training" here set forth that is calculated to enlist such feelings or to direct to such subjects in an educative way. On the contrary, the whole trend of the book is against that deeper organization of the life, from within, which is the aim of educating instruction.

The author's style is somewhat lacking in literary quality. Instances occur here and there of the loose use of relative words and participles; of lack of clearness and precision, and of failure to observe logical sequence in setting forth the matter in hand. (See pages 19, 20, 21, 22, 23, 24, 26, 27, 32, 72, 73.) But the author speaks whereof she knows. Her claims, so far

as they go, cannot be gainsaid. And there is that in what she says, and in the way she says it, that tends to carry conviction. For this very reason, the reviewer has felt it necessary, for conscience' sake, to point out what seem to him to be inherent dangers and vital defects.

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Concrete geometry for beginners—By ADELIA R. HORNBROOK. American Book Company, Cincinnati, 1895. 201 p. 75 cents.

Professor T. S. Aldis once said, "It is the fashion to talk of Euclid as being repulsive." Many persons do leave the preparatory schools with a real hatred for geometry. This hatred is surely not natural, for psychologists and mathematicians both tell us that every normally constituted mind should find delight in the reasonings of Euclid. Perhaps all teachers of mathematics will agree that the repulsiveness is not due to any defect in Euclid, but rather to defective methods by which the subject is approached and attacked. A large number of those who begin the study of Euclid without any preparation in the language or concepts of the subject will find it repulsive. The field of the unknown is too great. The pupil needs more of what may be called assimilative capital. And this capital he must have before geometry becomes anything to him but a jumble of words.

In view of these facts, good teachers everywhere have recognized the need of suitable material to be used in leading pupils through this necessary preparatory stage. During the past decade a number of good books suited to this purpose have appeared. One among the best of these is the book before me. The author, a teacher of mathematics in the Evansville High School, is a close and discriminating student of educational problems. The book is the result of practical schoolroom tests. "The aim of the work is to awaken gradually, by simple and natural methods, the mathematical consciousness of the child, and to guide his perceptions in such a way as to lead him to lay a firm foundation for demonstrative geometry by means of his own observations and inventions." A careful study of the book shows that the author has quite fully realized her aim. The opening chapter is on lines

and angles. Definitions are introduced gradually and only as they are needed. This need is shown by some question or exercise which has grown naturally out of what has preceded it. A few simple geometric truths, capable of concrete verification, are introduced. In the following chapters—which treat respectively of circles, arcs and angles, rectangles, triangles and lines, quadrilaterals, ratio and proportion, polygons, circles and lines, and squares and cubes—the same general plan is followed, with the exception that a larger number of geometrical truths are introduced. Chapters 4, 7, 10, 13, and 15 are devoted entirely to what the author calls cumulative reviews. In these chapters all the facts and definitions previously given are reviewed in an attractive and interesting way. Throughout the book the exercises are varied in form, and so well graded as to progressively call forth the best effort of the child.

The book is designed for use in the grammar school, but may be used in the high school as preliminary to Euclid. This book, like all books of its class, contains more matter than seems to be really needed. There is danger that the work may be mistaken for an end, rather than a means to things higher and better. This fault, however, is one that is easily remedied by the teacher. Selections may be made and portions omitted. Another danger is that the pupil may be led to believe that an approximate proof or a special verification is mathematically correct. As a great English teacher put it, "All approximate solutions, if allowed at all, should be carefully labeled *poison*."

The book will certainly receive a hearty welcome from all teachers who are seeking more rational methods, and, if carefully and judiciously used, cannot fail to make more royal the road to geometry.

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The growth of the Idylls of the King—By RICHARD JONES, Ph. D., Professor of English Literature in Swarthmore College. Philadelphia: J. B. Lippincott Co., 1895. 161 p. $1.50.

The policy of the EDUCATIONAL REVIEW keeps it from discussing at length books which do not concern directly the art and practice of teaching. A few words, at least, however,

must be said about Professor Jones's interesting monograph, on the plea that the *Idylls* are the natural reading of young lovers of poetry and the proper understanding of them therefore a necessary part of the equipment of every teacher of English. The author maintains that "any final judgment of Tennyson's *Idylls of the King* is inadequate, which, leaving out of consideration the history of the subject-matter of the poem and its treatment by other minds in our own and in other ages, regards it merely as the capricious creation of the poet, and not as the final form, for this generation at least, of wide-spread legends, centuries old." To be sure, the greater number of the readers and admirers of the poems love them and profit by them without the slightest knowledge of their sources. The people take works of art as they will, caring little what was the intention of their authors or the methods employed in producing them, and it is an open question whether all the researches of philology have made the *Iliad* or the *Canterbury Tales* or *Faust* a whit more effective to the people at large. But there is also the cultured and curious reader to be reckoned with, who keeps his eyes fixed on the "sources," and who gets from the *Idylls* not merely an æsthetic pleasure but historical and philosophical information. He contemplates the growth and development of the legends, inspects Tennyson's handling of his material, and finds the changes he made in proof-sheets and in later editions significant of changes in his attitude toward the world. Such wisdom, which we all crave, Professor Jones has patiently gathered for us and now expounds clearly to us. He has systematically collated Tennyson's revisions, and so marshaled the long lists of variations as to show the exact process of growth and change in Tennyson's plan—a process that gives us a precious glimpse into the character of Tennyson and into his conception of the value and meaning of his work.

G. R. CARPENTER

COLUMBIA UNIVERSITY

Lessons in the new geography—By SPENCER TROTTER, M. D., Professor of Biology in Swarthmore College, Pennsylvania. Boston : D. C. Heath & Co., 1895. 182 p. $1.00.

It is a fortunate thing that there are publishers who have the courage to undertake works viewing the science of pedagogics in its higher aspects. Especially is this true in the case

of a book that has no appointed place in a course of study, or whose use is not made compulsory. Of the multitude of pedagogical books—good, indifferent, and bad—perhaps one in twenty pays the cost of publication, while scarcely one in one thousand may be considered a good investment from a financial standpoint. Some of the best books of this class are almost unknown to the great army of teachers: yet paradoxical as it may seem, it is apt to be the unknown and unfamiliar book that exerts the widest and most far-reaching influence.

Dr. Spencer Trotter's *Lessons in the new geography*, a revised and enlarged edition of which has just appeared, is a book that may be properly ranked among publications of this class. It is the thoughtful work of a thoughtful teacher of teachers. It comes at an opportune time, and, still better, it is free from the humbug and empiricism of method fads.

It is opportune because in the matter of geography-teaching we are in much the condition of a scout who, having lost his bearings, has discovered a trail leading to his camp, although he may yet be a long way from it. That is, we are opening our eyes to the fact that geography as correlated to humanity is the aspect of the science to be presented to the student, though we are yet far from the practice of it.

Just why Dr. Trotter should call it the *new* geography is not plain, for it is this very aspect that geographers have long insisted on as the proper one and that a large class of educational reformers has quite as effectively resisted. Within the past few years, however, a great many enterprising and progressive teachers are beginning to realize that chapters in history are often nothing more than quantitative expressions of geographic laws—that, to be studied intelligently, geography must demonstrate the mutual relations of earth and man.

It needs only a casual inspection of his book to convince one that Dr. Trotter is full of his subject. He is charged to the muzzle and he gets to the bull's-eye of the target with a plunk that tells. Some of his paragraphs are of the nature of aphorisms; for instance:

"Never lose sight of the cause and the effect. Facts are the raw material of thought, to be transformed within the man and to reappear glowing with his personality."

"When you read, read widely. History, travel, poetry, romance, biography, as well as biology and geography. Each

in some way will light up the mind and help to clear the mists of ignorance. Lastly, come into contact with the living world. Touch it on every side. Books and study will soon wither the intellect unless the man or the woman be alive to all the impressions that come to them from the great world of humanity and nature."

The author's assertion that what he pleases to term the "old geography" is dead and fossilized must be taken as an exaggeration. The old geography is neither dead nor sleeping. That it carries an unnecessary amount of useless lumber, however, is apparent; but it is fundamentally good, and it must always remain the basis of scientific study. When the industries interwoven with human life are interpreted in the light of geographic laws, the old geography becomes the new science; it is an evolution, not a revolution—an expansion, not a substitution.

And here is the pitfall into which many educators have tumbled headlong. In order to get away from the dry side of geography, a kind of literature only a remove from fairy stories is substituted for the facts that sooner or later every child will be called upon to know. A certain amount of memory work is as essential in studying geography as in mastering a foreign language, and no amount of nature stories can be a wholesome substitute for it.

So superficial and slipshod are some of the recent efforts posing as the new geography that it would not be worth noticing them were it not for the mischievous results arising from their use; it is new only in being novel. Even some of the latest text-books have missed the mark sadly. The descriptive geography is there, and interesting stories about mankind are there; but there is no correlation of the two.[1]

Now, it is this question of the correlation of earth and man that Dr. Trotter brings out so prominently in his book. He is clear about it, and he writes to the point; and the sooner that teachers of geography follow out his line of thought the sooner their work will become effective. It is interesting to learn, for instance, that, in the United States, the density of population falls rapidly at a line closely approximating the 2000-foot contour; but the important thing to learn is the fact that at this contour the rainfall decreases to such a degree

[1] In the past, the writer must also confess to having been considerable of a sinner in this respect.

that the grain crops cannot be successfully raised. Here we have the geographic fact and the question of correlation properly brought togther: and not till then does it become useful knowledge.

This is the sort of work that the author of the *Lessons* insists upon, and it is not necessary to add that he writes with the knowledge of a thoughtful scholar and the judgment of a genuine teacher.

The book with its handsome typography, its clear press-work, and its tasteful cover of linen and buckram is in keeping with the more recent publications of Messrs. Heath & Co.

JACQUES W. REDWAY

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NOTES ON NEW BOOKS

Mention of books in this place does not preclude extended critical notice hereafter

The new edition of the German-English and English-German Dictionary, based on Flügel's *Wörterbuch*, edited by Schmidt and Tanger, is easily the fullest and most useful of the popular German dictionaries. The additions and changes in this edition are so numerous and important that it is really a new work. The book itself is a triumph of the printer's art, and the clear, open type is most pleasing to the eye. This dictionary should go into thousands of homes and schools (New York: Lemcke u. Buechner, 1896. 2 vols. 1000, 968 pp. $4.50).—— The reprinting of Mr. Abbott's scholarly translation of Kant's *Fundamental principles of the metaphysic of ethics*, in convenient form and at a low price, will be applauded by students and teachers of philosophy and ethics. The treatise is absolutely indispensable to a thorough knowledge of Kant's thought (London and New York: Longmans, Green & Co., 1895. 102 p. $1.00).——The latest issue in Longmans's unsurpassed Series of English Classics is Coleridge's *Rime of the ancient mariner*, with an introduction and notes by Mr. Herbert Bates of the University of Nebraska (New York : Longmans, Green & Co., 1896. 88 p. 45 cents).——Mr. Glazebrook has made a decided success in popularizing and making clear a very difficult subject in his book on *James Clerk Maxwell and modern physics*, the new addition to the Century Science Series. It is by books like this that our half-baked students of modern science will be led to study their subjects in an his-

torical and comparative way that will add immensely to their culture-value (New York: Macmillan & Co., 1896. 225 p. $1.25).——Frances Mary Buss exercised a wide and helpful influence upon education in England, and many teachers in America may derive inspiration and instruction from the story of her life as told by Miss Ridley (London and New York: Longmans, Green & Co., 1895. 400 p. $2.25).——Dr. Hinsdale has reprinted in a goodly-sized volume his chief contributions to current educational literature since 1885. His *Studies in education* are marked by the force, scholarship, and caution that his colleagues so gladly recognize and so highly appreciate (Chicago: Werner School Book Co., 1896. 384 p. $1.00).——General Greely's *Handbook of Arctic discoveries* tells pleasantly and concisely the thrilling and instructive story of the polar explorations from the early voyages in search of a "northwest passage" to the present. Teachers of geography will find it especially useful (Boston: Roberts Bros., 1896. 259 p. $1.00).——President Hervey's *Picture-work* is a very straightforward and practical treatment, for teachers and mothers, of the use of illustrative material in elementary teaching and Sunday-school classes. It is a helpful tract and deserves a wide reading (Meadville, Pa.: Flood & Vincent, 1896. 91 p. 30 cents).——Good things follow hard on one another in the Riverside Literature Series. The latest issues are *Hawthorne's House of the Seven Gables* and Swift's *Gulliver's Travels* (Boston: Houghton, Mifflin & Co., 1896. 378 p. 60 cents; 193 p. 40 cents).——A happy suggestion is well carried out in *The Brownings for the Young*, by Frederic C. Kenyon, formerly of Magdalen College, Oxford. It is a careful selection from the poetry of Robert Browning and of Elizabeth Barrett Browning "for those who are, comparatively speaking, beginners in the study and enjoyment of poetry." (New York: Macmillan & Co., 1896. 203 p. 40 cents).——*Fritz auf Ferien* deserves a warm welcome from American schoolboys. It is a wholesome story, full of boyish humor and excellent material for training in colloquial German (Boston: D. C. Heath & Co., 1896. 57 p. 20 cents).——Professor Edward Channing of Harvard has made a noteworthy text-book in his *United States of America*, 1765–1865. It is compact, well-proportioned, and well-made. We shall notice it at length later (New York: Macmillan & Co., 1896. 352 p. $1.50).

X

EDITORIAL

The long fight to free the public-school system of New York City from the control of a clique and of petty political bosses is ended. The battle has been won. Good citizenship and patriotism asserted themselves and, with the powerful aid of a unanimous press, created and organized a public opinion that was irresistible. The opposition grew meaner and more unscrupulous as the end approached. Misrepresentation and appeals to bigotry and prejudice have always been its favorite weapons, but during March and April no lie was too preposterous and no slander too silly to be sedulously circulated. The teachers were told that the reform bill removed them all from office immediately on its passage; that hereafter all public-school teachers must wear a uniform; and that graduates of private schools and colleges would in future be preferred in making appointments. These clumsy inventions, and others like them, show the desperation and the wickedness with which the "ringsters" fought to retain their spoils. They were willing to worry and frighten the four thousand teachers for whom they express such profound concern, in order to make a point against the reformers.

But untruthfulness, blackguardism, and demagoguery availed them nothing. On March 31 the Senate passed the school bill by the decisive vote of 31 to 13. This conclusion was reached after five hours of debate, in which Tammany Senators Cantor, Ahearn, and Grady surpassed all of their previous records. That no one of them had read the bill, and that they were not even familiar with the existing school administration in New York, became apparent as the debate proceeded. Senators Stranahan, White, Pavey, and Ford were the principal speakers for the bill. Senator Ford made a terrific onslaught on the school system as Tammany had conducted it. Senators Pavey and Stranahan spoke with full information and irrefutable logic; while Senator White supported the bill in a speech that for scholarly finish, as well

as for force and mastery of all the facts, has rarely been equaled in the legislature of New York.

The Assembly, under the leadership of Speaker Hamilton Fish, who has always been a strong advocate of the school-reform bill, acted promptly. The Cities Committee reported the measure favorably on April 2, and its consideration was made a special order for April 7. On that day the Tammany tactics in the Senate were repeated in the Assembly, and with a like result. The bill passed by an overwhelming majority, the vote being 88 to 43. This splendid result was brought about by months of a campaign of education, and by the inspiring and conclusive speeches of Assemblymen Austin, Laimbeer, and O'Grady.

Under the provisions of the new constitution the bill was then sent to Mayor Strong, who, after listening patiently to all that the trustees, the boss-ridden teachers, and their political friends had to say, accepted it on behalf of the city on April 23. It will become a law when it receives Governor Morton's signature, which will doubtless be appended to it before this reaches our readers.

This gratifying conclusion of a long and weary contest is due primarily to the intelligence, public spirit, and determination of a group of men and women who have kept up the fight for years. They have never permitted themselves to be discouraged by temporary defeats, or disheartened by apparently insurmountable obstacles, or deflected from the plain path of duty and public service by ridicule or abuse. In Governor Morton, Mayor Strong, and the legislature of 1896, men were found willing to listen to argument on this school question, and independent enough to act promptly and decisively upon their convictions. The combination of these forces made victory possible. On July 1 the ward trustee system ceases to exist. It has for years sheltered incapacity, favoritism, political chicanery, and extravagance. It has effectually prevented any genuine supervision of the schools or any efficient organization and operation of the system as a whole. Where good schools are found in New York, they exist in spite of the trustee system; where bad schools are found, they are traceable directly to it.

A new era now dawns for the New York teachers. Their self-constituted and self-seeking leaders have deceived and

injured them. Owing to the action of these leaders, the teachers—the great majority of whom are sincerely laboring for the best interests of the children in their care—have been put in a totally false light before the public. Their leaders and spokesmen have caused them to forfeit public confidence. They have been induced or ordered to sign petitions that recited lies and to attend meetings where lies were deliberately told to them. But their future is in their own hands. If they will eschew politics and wire-pulling, devote themselves to their school work, and turn their backs upon those commissioners, ex-commissioners, trustees, and principals who have misused and abused their confidence, they will find public confidence in them speedily restored. They will then have the weight that belongs to them in molding the public opinion of the metropolis. But their selfish and ignorant leaders must be sent to the rear.

To learn how selfish and how ignorant some of these leaders have been would astonish even the professional politician, used as he is to duplicity and intrigue in all their forms. One principal, for example, who has thrust himself forward at every opportunity as a bitter and unrelenting opponent of the reform bill, has at the same time been intriguing to secure an appointment as assistant superintendent under its provisions. Another principal stated to his teachers, publicly, the deliberate untruth that the bill provided for the appointment of sixty assistant superintendents of schools at a salary of four thousand dollars a year each. Page after page of this REVIEW could be taken up in reciting similar instances of knavery.

It is worth while noting, too, how completely the ward trustees, and their tools among the teachers, underestimated the force with which public opinion was running against them. When Governor Morton sent to the legislature a special message on school reform, it was due to "social influence"; when the Senate Committee reported the reform bill favorably, it was because of "intrigue"; when the newspapers unanimously supported the measure, it was ascribed to "muzzling"; when both houses of the legislature voted overwhelmingly for the bill, it was "politics" that did it; and finally, when Mayor Strong accepted it, he had been "hoodwinked." The simple, concrete idea that they had no case and were over-

whelmed with argument never entered their heads. To argue the matter was furthest from their thoughts; "pull" was the only thing that occurred to them, and New York has witnessed the shameful spectacle of women principals and teachers calling upon the most unscrupulous political "bosses," and imploring these "bosses" and their wives to prevent the passage of the bill. After such a sight as that, to say that the reform bill introduced "politics" into the schools is the merest effrontery.

The new school law contains a provision that will develop local interest in the schools and foster local pride in them to the full. It provides for school inspectors to be appointed by the Mayor in and for the several inspection districts into which the city is to be divided by the board of education. While the local trustees were the dispensers of patronage and soon drifted into politics, the inspectors will have no teachers to appoint and no contracts or jobs to give out. But it is their duty to visit the schools, to hear complaints of children and parents, to see that the school laws are enforced and the sanitary regulations obeyed. Quarterly reports to the board of education will tell of these things; and so every section of the great city can readily make its voice heard at the central office. This local inspection system has worked well in Europe, and it will doubtless be of benefit here. It permits a single authority to license and appoint teachers and to disburse the school moneys without impairing local interest and local pride.

One of the amusing incidents of the closing weeks of the school-reform campaign was the strenuous attempt to identify in some way with the contest a little-known magazine writer, who is sometimes jocularly referred to as an "expert in pedagogy." Some of his alleged friends have made him ridiculous by claiming for him the discovery of the need of school reform in New York as well as the formulation of the reform plan. These persons are ignorant of the fact that the movement which has just come to a successful issue began in 1881, and that the first Public Education Society grew out of it in 1888.

In this connection the following paragraph from the *School Journal* of April 18 is of interest:

> Its principal features [those of some scheme prepared by the writer in question] were embodied in a bill prepared by a special committee of the Committee of Seventy, which was organized to bring about needed municipal reforms. . . No credit was given to the author of the plan at the time, though whole passages from the *Forum* article were 'cribbed' . . . The politicians got hold of it [the Committee of Seventy's bill], introduced a number of objectionable details, and edited it after their own peculiar fashion, so that in the end it became unpopular and was shelved.

The above paragraph contains three sentences. Each sentence makes a statement that is contrary to fact. If this is the result of ignorance, the paragraph is misleading; if it is the result of intent, the paragraph is untrue.

The addresses and principal discussions presented at the fifth annual meeting of the Harvard Teachers' Association, which are published entire in the present number of the REVIEW, deal with a topic that is just now receiving a good deal of attention among college and secondary school men in the Eastern and Middle States. Although the topic carried the name of "A wider range of electives in college admission requirements," the subject could have been justly called, "The closer articulation of secondary and collegiate education," for the meeting was another recognition of the desirability, daily becoming more obvious, of promoting any good plan for the articulation of the school and the college; so that while the schools discharge their independent function of furnishing a secondary education adapted to the needs of young men and young women living in the nineteenth century, they may at the same time—but incidentally—continue to fulfill their traditional function of preparing their pupils for college.

It was apparent throughout the entire discussion that although the sub-topics named for special consideration were only two in number, and while the speakers therefore confined themselves especially to those topics, these restrictions were imposed only by the time-limits of a single meeting, and that what was sought was really a greater range of subject matter, properly taught, which, under appropriate relative "weighting," could be accepted by all colleges toward satisfying their admission requirements.

This was clearly brought out by President Eliot in opening

the discussion on the general topic. He pointed out also that there are three important matters to bear in mind in approaching the consideration of the whole matter; first, that the time has come when both the colleges and the schools "may expect a large addition to the old-fashioned requirements for admission," as regards the range of subjects thought to furnish proper preparation for college or "higher education"; next, that we need a mode of attaching to the new subjects as to the old, a just valuation for admission purposes; and thirdly, that we shall need a method capable of securing tolerably uniform enforcement of new and old requirements.

The papers by Mr. Grandgent and Mr. Bergen are strong pleas for the adequate recognition of their respective subjects, as substantial subjects for secondary schools, and hence as subjects capable of furnishing adequate training in preparation for college work. Mr. Grandgent's paper is marred by no disparagement of the classics as compared with the modern languages, but he does insist on the wisdom of teaching the modern languages, first, during the earlier years of the pupil's school life on the ground of facility and accuracy of acquisition, practical utility, and general culture, and also as a preparation for college work, including the study of the classics. Mr. Bergen's vigorous paper was a revelation to some persons who remember the botany of their school or college days and who have not kept pace with the progress that the teaching of that subject has made. The subject loses none of its earlier charm because it now receives scientific instead of dilettante treatment, but it has gained enormously in virility, and hence in usefulness as a means of training both in school and college.

The discussions that followed the principal addresses, with perhaps one exception, showed no conspicuous differences of opinion, and for the most part served to emphasize the positions already taken in the addresses. This unanimity of opinion in a representative gathering of school and college teachers cannot fail to promote the consummation of the desired changes in the present college admission requirements. The first important result of such changes will be, of course, to improve the teaching in the newer subjects, in the secondary schools. As long as the shadow of collegiate disparagement, or at least of indifference, rests on certain subjects or groups of subjects in the secondary schools it is vain to hope

that those subjects will receive either the time or the attention they deserve. And the second result of such changes will be no less important; it will be that close articulation of secondary and higher education the consummation of which this and other recent meetings and conferences are intended to promote.

President Eliot's suggestion, embodied in his opening address, concerning the desirability of establishing a Board of Examiners representing a group of leading colleges, opens an interesting field for the co-operation which has lately come to be so important a means of dealing with educational questions. There can be no doubt that the realization of such a plan would be of great advantage to the country. The present difficulty of securing uniform enforcement in college admission requirements by the colleges would probably be largely removed. Moreover, with such a plan all the inconveniences to the schools arising from peculiarities in the methods of enforcing both new and old requirements could be entirely obviated. The Association expressed its general approval of the plan by a unanimous vote.

It is interesting in this connection to add that more than three years ago a resolution looking toward the establishment of just such a Joint Entrance Examination Board, was proposed to the faculty of Columbia College and laid over at the introducer's request on the ground that the time for its adoption had not then come. In February of the present year the resolution was taken up and passed without a dissenting vote. So that Columbia College is already officially committed to the plan.

State Superintendent Skinner of New York continues to signalize his administration by important advances in the development of the common-school system of the State. Far from being satisfied to hold the ground already gained, he is constantly planning new developments. The latest of these, and one of the most important, resulted in a conference between Superintendent Skinner and Mr. Downing of his staff, and representatives of the colleges of the State. Columbia, Cornell, New York University, Vassar, Hamilton, Syracuse, Rochester, Colgate, Union, and Wells were represented. The object of the conference was to consider a plan submitted by

Mr. Skinner by which college graduates, having received instruction in the theory and practice of education, shall be given first-grade State licenses. These licenses are valid for three years, and are then renewable for life, without examination, if the holder's teaching experience has been satisfactory. The importance of such an arrangement is apparent. College graduates ought to be found in the public-school service in far greater numbers than at present. That they are not found there is due largely to the fact that their scholarship and training have been discriminated against in the rules governing teachers' licenses. Obviously, a college training alone does not equip one for teaching; but a college training, plus a careful study of the principles of education and some contact with its practice, does give the desired equipment. It is this that Superintendent Skinner proposes to recognize. Colleges that have well-established departments of education can take advantage of it at once. The others must develop their educational courses so as to enable them to profit by the new departure.

The minimum to be insisted upon by the State Department of Public Instruction will probably be (1) satisfactory courses in psychology, logic, and economics, and (2) about thirty weeks of instruction in the history, principles, and practice of education. Formal announcement of this minimum will be made within a few weeks.

Dr. C. C. Van Liew of Normal, Ill., has two carefully prepared and judicial articles on contemporary educational movements in this country, in the two last issues of the *Zeitschrift für Philosophie und Pädagogik*. The first deals with the child-study movement, and the other with the Cleveland debate on correlation, and the subsequent discussions on the same subjects.

It is announced by *The Nation* that the Prussian Academy of Sciences intends to publish a complete and critical edition of the works of Kant. The labors of Benno Erdmann, Vaihinger, Adickes, Reicke, and others, have made such an edition necessary, and have provided a large amount of material for it as well.

The universities of Heidelberg and Tübingen have recently conferred the degree of doctor of philosophy upon women.

Preparations for the Buffalo Meeting of the National Educational Association are going on rapidly. The executive officers are working hard, and a local organization of great strength and activity has been formed in Buffalo. The general programme, which is almost ready for publication, will contain the names of Professor Brander Matthews of Columbia University, Professor W. P. Trent of the University of the South, President Jordan of Stanford University, Bishop Vincent, Bishop Spalding, President Draper of the University of Illinois, and others as well known and distinguished. Unless all signs fail the attendance will exceed that at Denver.

An extremely important conference on child-study will be held at the Chicago and Cook County Normal School on May 14, and the following days, under the auspices of the Illinois society. The feature of the meeting is to be not the reading of papers, but the bringing in of experiences by the members themselves. The meeting is certain to be very profitable.

At Jacksonville, in February last, the Educational Press Association elected the following additional members:

American Journal of Education,	St. Louis, Mo.
Educational News,	Newark, Del.
Iowa Schools,	Des Moines, Ia.
Interstate Review,	Danville, Ill.
Journal of Pedagogy,	Binghamton, N. Y.
Kindergarten News,	Springfield, Mass.
Pacific Educational Journal,	San Francisco, Cal.
Teachers' World,	New York, N. Y.
Western Teacher,	Milwaukee, Wis.
Wisconsin Journal of Education,	Madison, Wis.

The Outlook has rendered splendid service in the fight for the redemption of the New York City public schools. Its issue of April 4 contained an editorial article on "The Poor Man and the Schools," that made a profound impression upon the community.

XUM